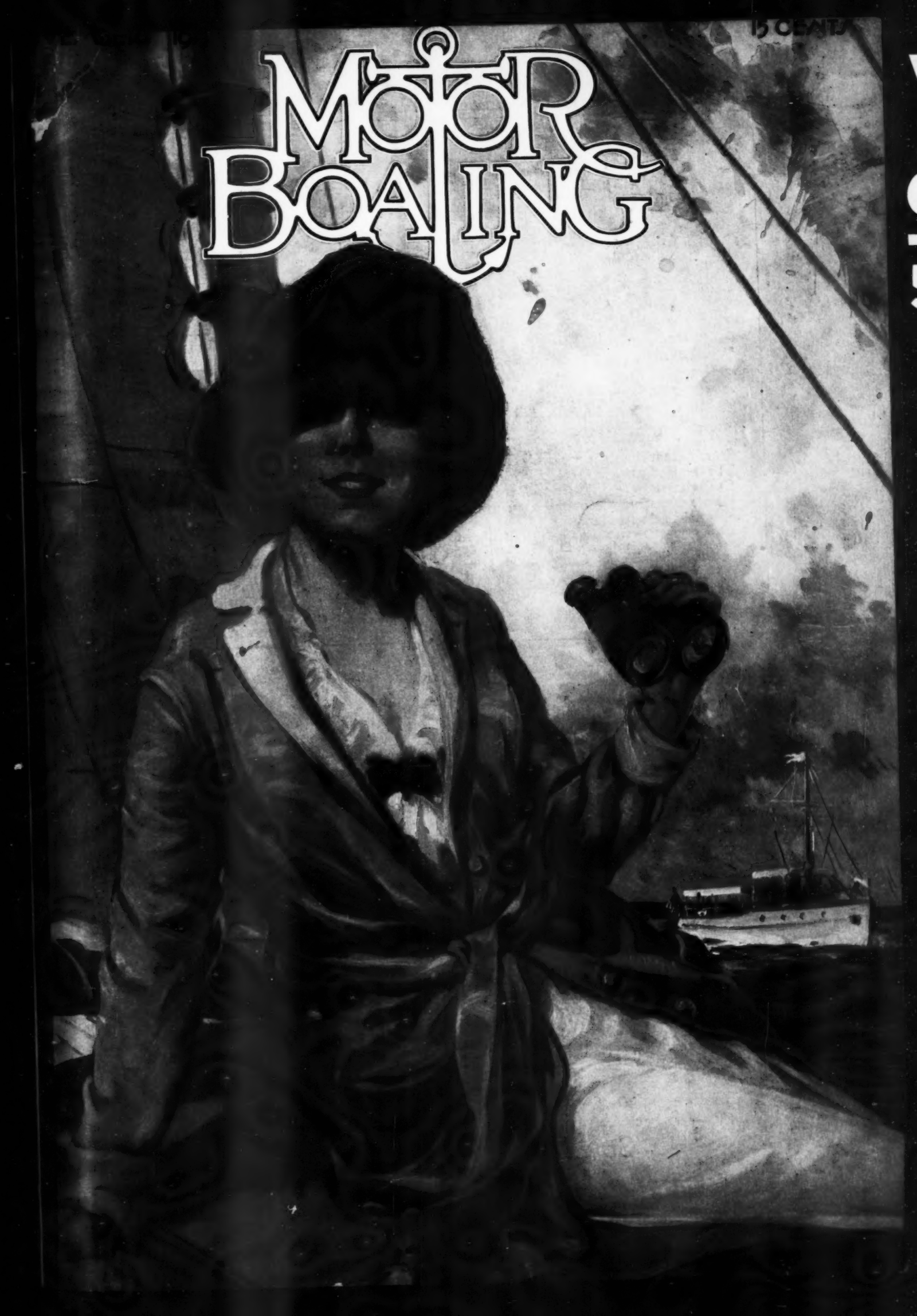
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BOATING

Elco
MOTOR BOATS
Reg. U. S. Pat. Off.

45 ft. ELCO Cruiser

STANDARDIZED ELCO MODELS

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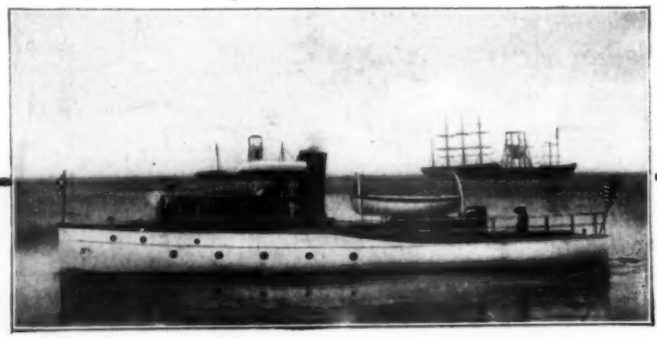

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125-150 H. P. *Standard*

Gordon Blanding, Owner
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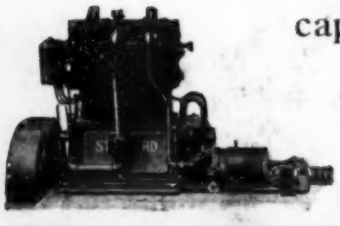

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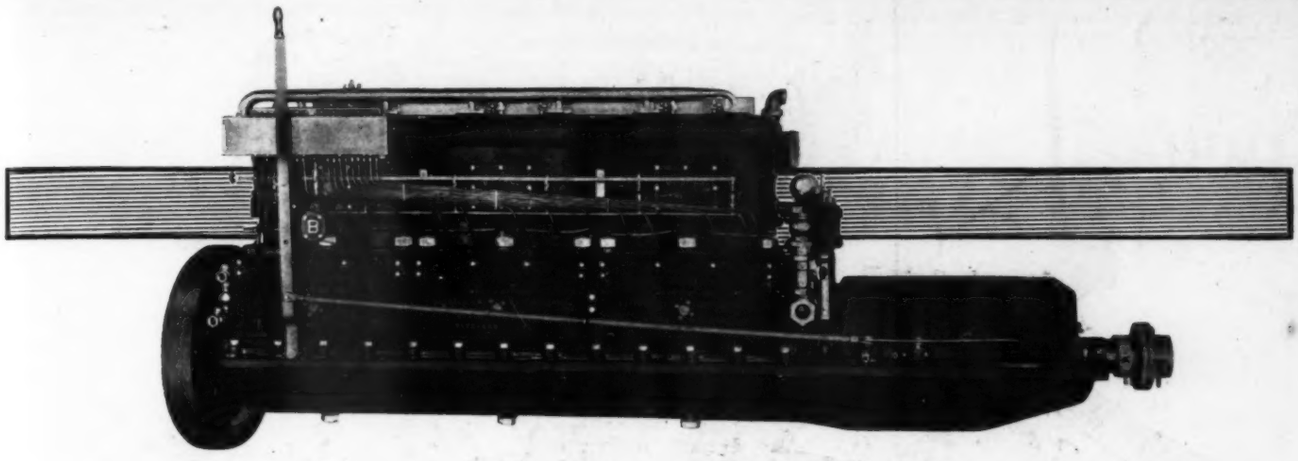

For The Steady All-Day Grind Install a Sturdy Engine

Much is asked of the motor in the cruising yacht or the work boat. It must not only give steady, reliable power, but it must give it day after day, and all day long.

That is why a boat of this kind needs a sturdy engine, one which is built from base to spark plugs with the idea of embodying in its construction a maximum of strength and reliability.

Such are the Buffalo Heavy Duty, Slow Speed models, built in all sizes from 10 to 150 H.P.

"Buffalo"
The Engine of Constant Service.

Buffalo engines are also built for the lighter types of boats, speed boats, runabouts, launches, light cruisers. In fact there is a Buffalo for every sort and size of boat.

Shall we send you the Buffalo Book?

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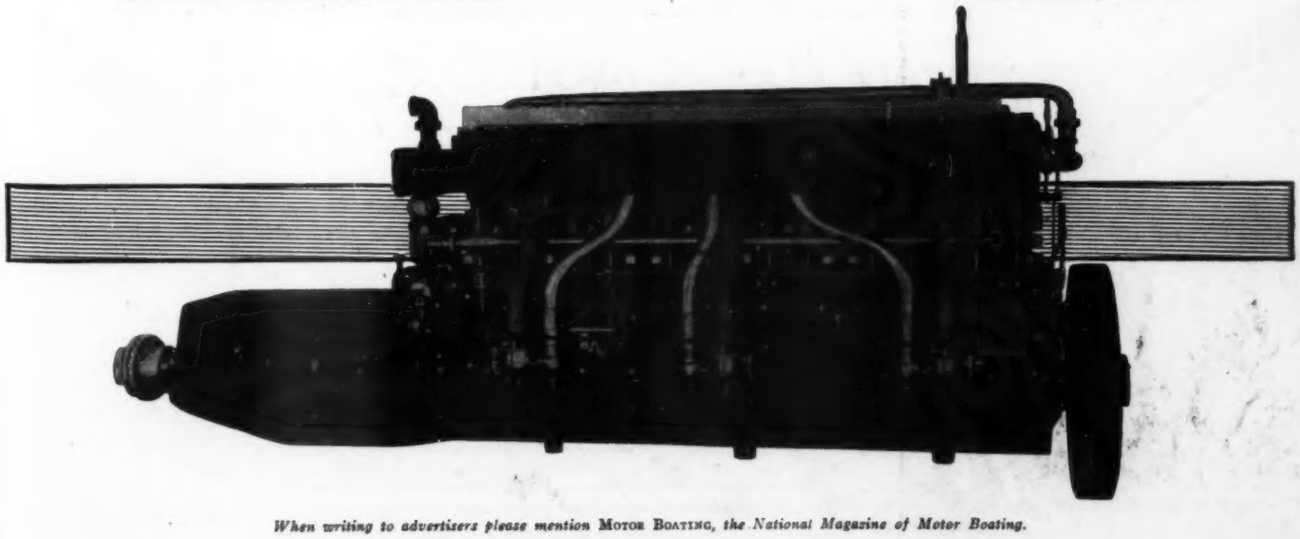
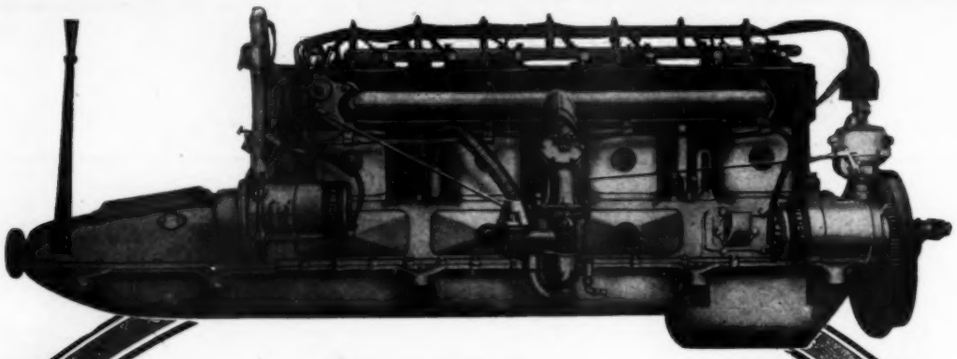
1274-1286 NIAGARA STREET **BUFFALO, N. Y.**





THE STANDARD HIGH-SPEED MOTOR

1916 VAN BLERCK Eight

SELDOM in the annals of American manufacturing will you find a motor that has sprung into popularity so quickly as this 8-cylinder Van-Blerck. In the marine field such a thing is almost unknown. It is not unusual for a smaller or cheaper motor to find a big sale from the start, but when it comes to a motor of this class and type, the brief record of this model has set a new pace for quick recognition and approval.

January of this year saw the first of these eights shipped from the Factory. In that month the U. S. Government took delivery of four. From January to November 1st, twenty-one were shipped for regular domestic installations, and in addition to this, ninety-eight have already been shipped abroad for the use of the various governments. Reports have reached us of wonderfully successful installations, of 60 footers guaranteed to make 26 miles and which turned up in excess of 30 miles on actual test. Reports also of long continuous runs at top speed and of spectacular accomplishments that have made world history as well as marine history.

This Eight is a typical Van Blerck through and through. A standardized product with every part interchangeable and every little part built to a definite standard, just the same as we build the four and the six of the same cylinder size—5½" x 6".

Only one carburetor is used on these Eights, thus making control much easier. A highly efficient governor is also attached to all motors for export The two unit electric starter is another highly efficien unit, the generator being gear driven and not chain driven. Ignition is by a two spark, high tension, eight cylinder independent magneto with an Atwater-Kent battery distributor for starting. An instrument board is also provided in which all the ignition, starting and oiling instruments are sustained, thus centralizing the control. This board is cast from aluminum and is a very attractive addition to the motor.

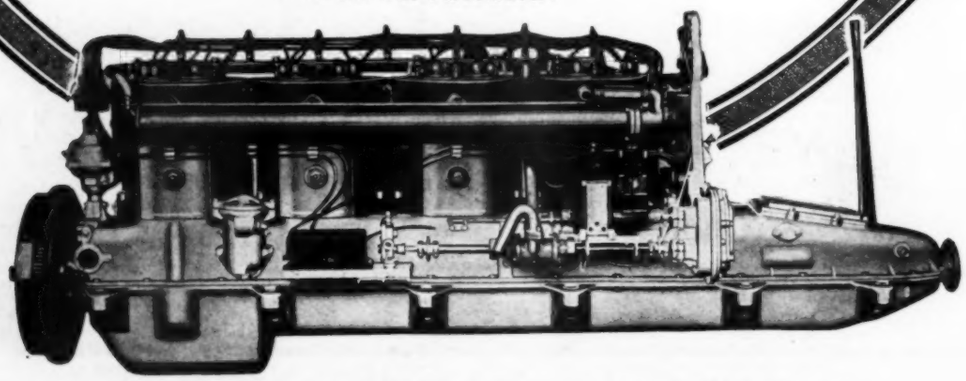
Despite the fact that we still have a large number of these eights to ship abroad, nothing will be allowed to interfere with the prompt and efficient handling of all domestic orders. In fact, a domestic order gets "first call" and all such orders will be shipped out without undue delay.

The NEW VAN BLERCK CATALOG comes off the press on November 6th. YOU ought to have a copy—write for one.

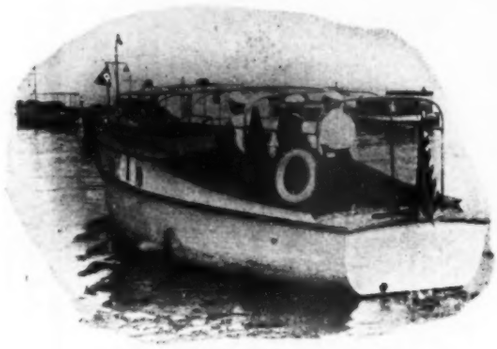
VAN BLERCK MOTOR CO.

Eastern Sales Office: Woolworth Building, New York City

MONROE, MICHIGAN



Loew-Victor Powered Cruiser "Naomi" Wins A. P. B. A. Championship

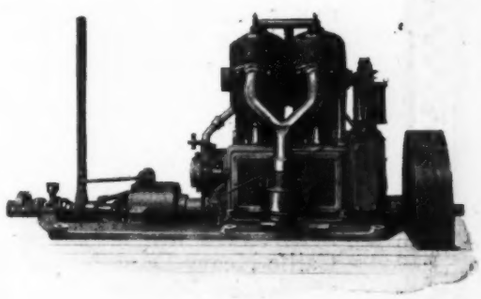


OWNED BY WM. McNAMEE—32x8x2½

Driven by a three year old stock model 11—12 H.P. Loew-Victor Engine, this combination has to date entered and won against a varied field of larger and more powerful rivals, the Bridesburg to Ocean City Race, 134 nautical miles; Special Race, Columbia Y. C., 18 nautical miles: Du Pont Trophy Race.

A Record Unequalled by Any Other Boat or Engine This Year and Proof Positive of the Power, Reliability and Consistency of Loew-Victor Engines

The model 11 engine shown is but one of our sizes, built up with the same cylinder dimensions as "Naomi's" motor in 1, 2, 3, 4, 6 cylinder units ranging from 6 to 60 H.P. in medium duty and high speed types. Each is backed by "Records of Service" such as you can be assured of obtaining in the specification of a Loew-Victor for your boat.



2-CYL. MODEL 11—NAOMI'S ENGINE

Our Catalog Describes the Entire Loew-Victor Line. Send for it.

LOEW-VICTOR ENGINES

LOEW-VICTOR ENGINE COMPANY

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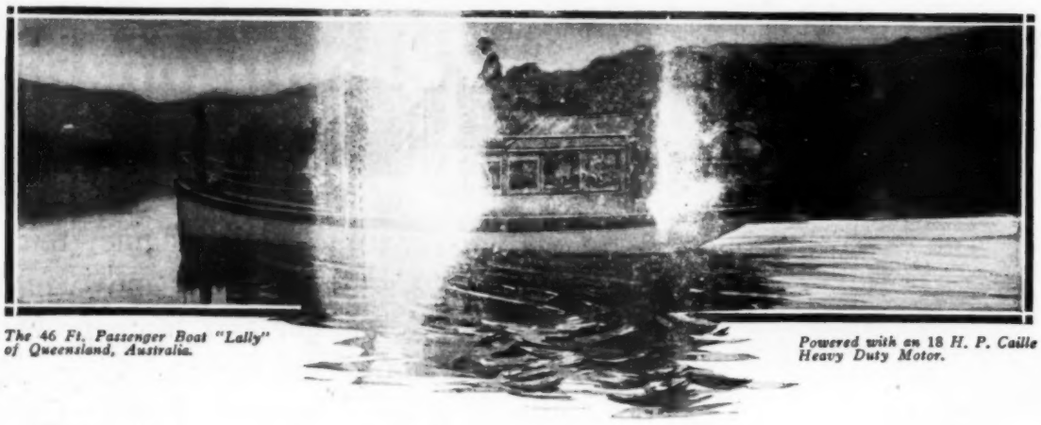


The 46 Ft. Passenger Boat "Lally" of Queensland, Australia.

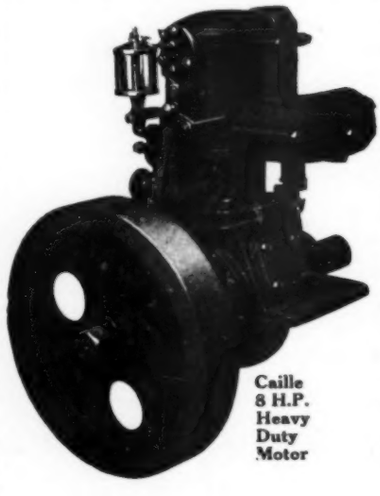
Powered with an 18 H. P. Caille Heavy Duty Motor.

Passenger Service Demands Reliable Motors

THE public pays for prompt and safe passage and has the right to demand it. They will not tolerate repeated delays due to an inferior, troublesome motor. Nothing destroys confidence in your boats and your service more readily.

Thousands of passenger boat owners all over the world early realized this fact and have fortified themselves by installing Caille Heavy Duty Passenger Service Motors.

These motors are not built for speed. They are not designed "as light as possible" at the sacrifice of reliability. Every part is made amply strong to meet any undue strain to which it might be subjected and then a liberal percentage of over-weight and strength is added.



Caille 8 H.P. Heavy Duty Motor

In design and operation, Caille Heavy Duty Motors are made just as simple as possible. They embody no freaky features whatever. They are built to render a reliable, dependable service without the usual continuous tinkering that many motors require. They will keep your boats running on schedule time year in—year out.

Caille Heavy Duty Motors are built in sizes ranging from 2 to 30 H.P. in one to four cylinder designs. We also build a line of marine motors for standard pleasure boat service. Both are fully illustrated and described in our free Marine Motor Blue Book. Get a copy.

The Caille Perfection Motor Co.
1540 Caille St. Detroit, Mich.

CAILLE
Perfection Motors

November, 1915

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THE NATIONAL MAGAZINE OF MOTOR BOATING

Entered as second-class matter at New York, N. Y., Post Office.

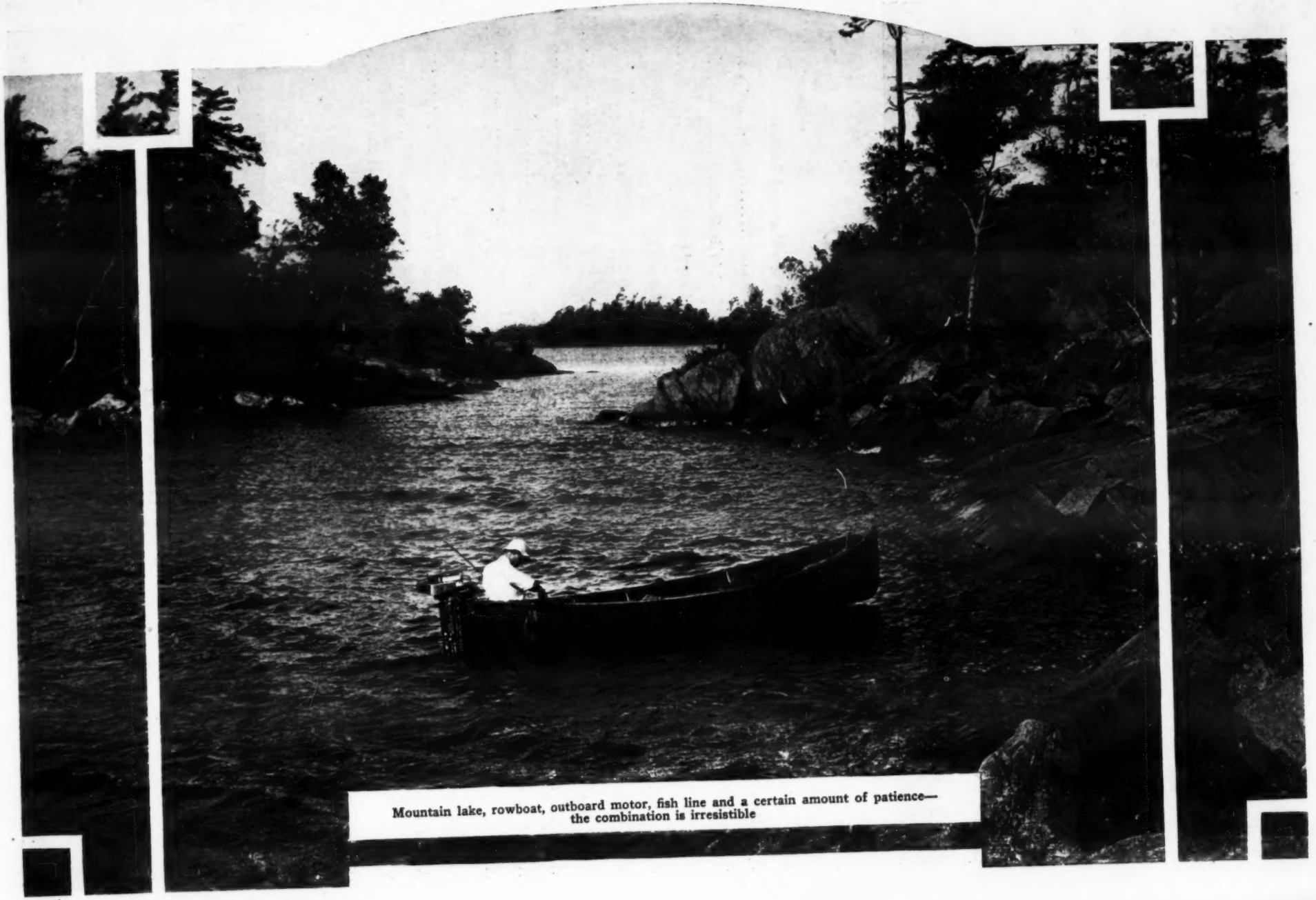
Copyright, 1915, by International Magazine Co. (MoToR BoatinG)

Published Monthly by International Magazine Company, 119 West Fortieth Street, New York City

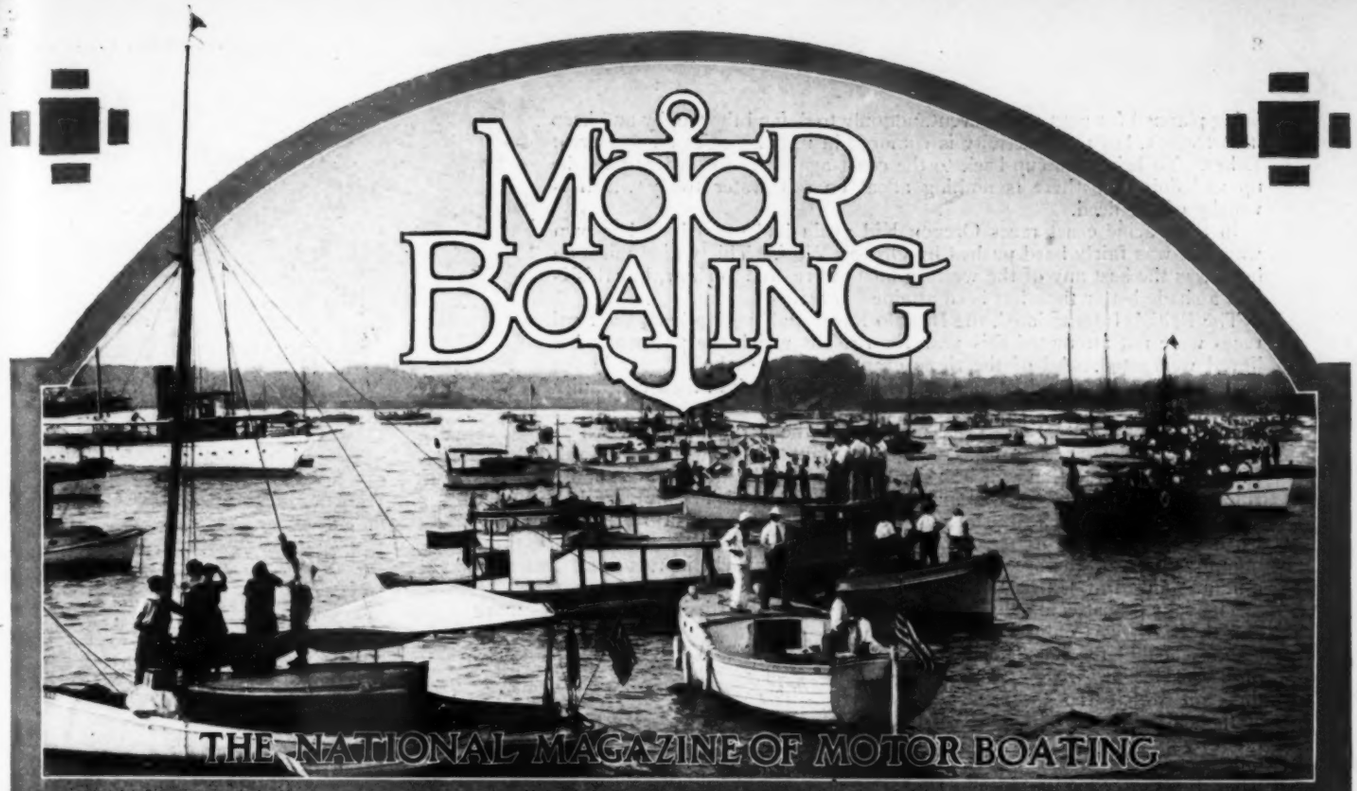
G. L. Willson, President — W. G. Langdon, Secretary — S. S. Carvalho, Treasurer

Telephone: Bryant 8760 — Cable Address: Motoria

15 cents a copy. Subscription, $1.00 a year. Extra Canadian postage 50 cents. Extra foreign postage, $1.00.



Mountain lake, rowboat, outboard motor, fish line and a certain amount of patience—
the combination is irresistible



Speed Demons Afloat and Ashore

The Motor Boat Shows the Greatest Speed Increase of Any in 1915—What the Results of the Racing Season Just Finished Indicate

THE curtain has fallen for the season of 1915 as far as further racing activity is concerned. There are perhaps not a few who will breath a sigh of relief and rejoice that the agony is over. Yet when we all have had time for reflection, time to study and analyze what has happened in the racing line this year, we cannot but feel satisfied with the results in general and have much hope for the sport in years to come. Taken altogether the racing season just at a close has been one of the most successful ever. Some may take exception to this statement, yet it is a fact.

Perhaps from the standpoint of number of entries in some events the results do not compare favorably with years gone by, yet judging the success of any racing event solely from the angle of the number of starters is strikingly unfair. Otherwise—that is regarding speed, consistency, reliability, seaworthiness and the types of the competing boats—never before in the history of motor boat racing have results been better. Furthermore, the changes in the handicapping rules adopted last fall have proven the wisdom of considering the revolutions per minute as an important factor in determining power and speed in some particular types of racing craft.

There are a few faster and perhaps a trifle more comfortable methods of high speed transportation than the wonderful hydroplane of 1915, but in no case has the increase in speed in one year by any of these various methods of transportation been as great as that which we have witnessed in the hydroplane in the period between 1914 and 1915. In fact almost annually since 1907 or 1908, when the first hydroplane made its appearance, we have seen almost phenomenal strides upwards, even surpassing the relative gains made in other internal combustion propelled vehicles such as the motor car and motor cycle. The speed increase in the steam driven liner, battleship and destroyer appear insignificant compared with what has happened with the gasoline driven craft recently. This does not necessarily mean picturing Disturber IV of this year running away from Baby Speed Demon II, of 1914 fame, for the statement is equally truthful for almost any type of motor boat.

Naturally the performance of Disturber IV at Chicago this year stands out head and shoulders above anything which has ever happened in this field. A jump from a speed of 51.7 miles per hour in 1914 made by Baby Speed Demon II, in her mile dashes on Lake George, to Disturber IV's average of 60.77 under almost similar conditions on Lake Michigan, represents an increase of 17½ per cent and places the motor boat in that long sought mile-a-minute class.

The class racing of the Mississippi Valley Power Boat Association was another demonstration that the probable answer to the much discussed question of the future of medium-speed racing lies in the adoption of universal and uniform class racing for the whole country. But this goal will not be reached until the various associations and governing bodies get together and formulate standard class restrictions as to piston displacement and hull requirements. The American Power Boat Association has offered to meet the other associations at least half-way and it would not be surprising to see something really worth while accomplished in this line before another racing season rolls around.

The speeds made by the winner in every class race of the M. V. P. B. A. showed a substantial gain over that of 1914 and the number of "Did Not Finishes" on the score card was less.

The history of this year's Gold Cup races is probably still fresh in the minds of many. Never were there more glorious prospects for an event which promised to be a record breaker that those which appeared previous to the races on Manhasset Bay this year, and equally true is the fact that never before has there been a greater failure to materialize in that which was expected. Fifteen real entries, eight starters and two boats to finish the three days' races is about all that can be said of this event. Yet the fault can be all directly attributed to some one—owner, builder or designer—being blinded by the one idea that he must possess a craft having nothing but extreme speed in order to be able to win the trophy. The folly of such an idea is most strongly emphasized by the fact that the boat taking second place in this field of fifteen, averaged only 22.04 nautical miles an hour in three days' racing.

Without question the Gold Cup went to the boat most deserving and renewed interest in racing is sure to result from the move. Several high speed crafts are already reported as

being planned for next year's event, not only to defend the trophy and keep it at Detroit, but much activity is rumored in near-by cities on the Great Lakes. To bring the cup back to the coast again the easterners must be up and doing, as there is nothing afloat on salt water today which is worthy of the deed.

In the Pacific coast races Oregon Kid again had everything her own way, but was fairly hard pushed by Oregon Wolf. Thirty-nine miles an hour was the best any of the western boats were able to show, but this is just a shade better than has been attained in a race before.

The British International, the Buffalo Races and the National Carnival races were not attempted this year for reasons which the promoters believed warranted. All of the three events have been head-liners in the past and it is to be regretted that there had to be a break in their continuity of occurrence.

Turning one's attention for a moment to the handicap races which might be classed as fixtures, several important points will be noticed. First of all the question will be raised, "How did the new handicapping rules work out?" As an example refer to the Record Trophy race held on the Delaware. Fourteen boats started in this 97-mile race and thirteen of these finished. The winner, Eugenia, romped home slightly more than a bare three minutes ahead of the second cruiser, Pickaninny, which, in turn, was less than a minute ahead of Hattie Bert.

The fourth boat came along two minutes later, the fifth in three minutes more and the sixth was only twenty seconds behind the boat ahead of her. Here we find a race, then, in which the first and sixth boat to finish were separated by only ten minutes in 96 miles—an excellent example of what the A. P. B. A. rules will do with a heterogeneous collection of cruisers if they are given a chance.

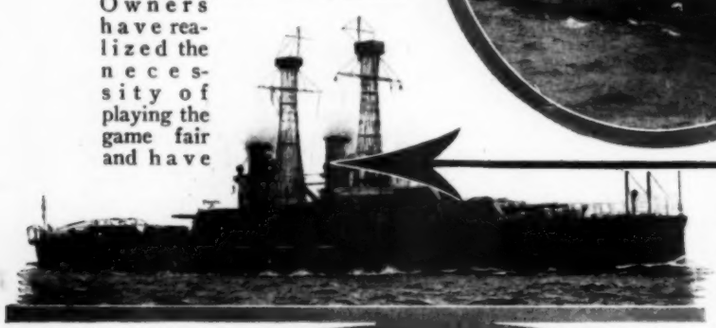
Contrary to the prediction of a year ago, and perhaps it might be said contrary to every one's expectation, not a single protest in regard to the r.p.m. question has reached headquarters. Owners have realized the necessity of playing the game fair and have in most instances turned in an honest declaration of what their motors are capable.

In both the New York to Albany and return race and the New York to Block Island race, new records were established. In the former race, which is 270 miles in length, Flyaway III's remarkable run of 12:34:37 will long be remembered as one of the real achievements of the year.

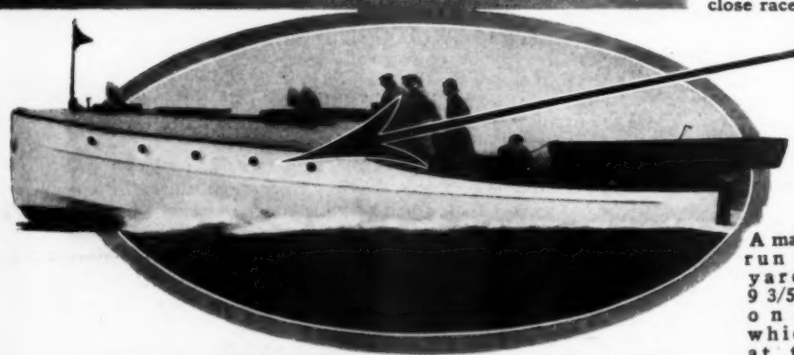
The ocean race to Bermuda seems to be a thing of the past, as no race has now been held since 1913. There doesn't seem to be a popular demand for a race of this kind and probably the Bermuda race will die a natural death. The plans for the 6,000 mile race from New York to San Francisco via the Panama Canal were progressing smoothly until the exposition people who were promoting

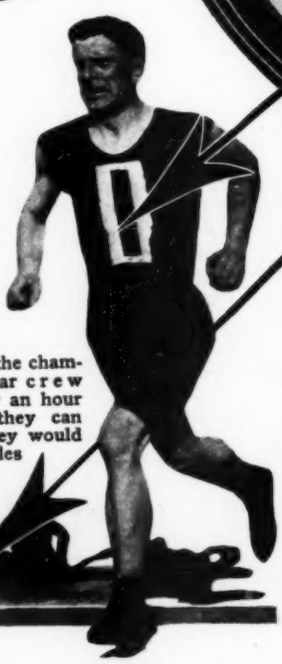
An ice boat will go faster than the wind and speeds of 60 miles an hour are not uncommon

The torpedo-boat destroyer McDougal broke all speed records for this type of boat in 1914, when she averaged 36.88 miles per hour on her trial runs

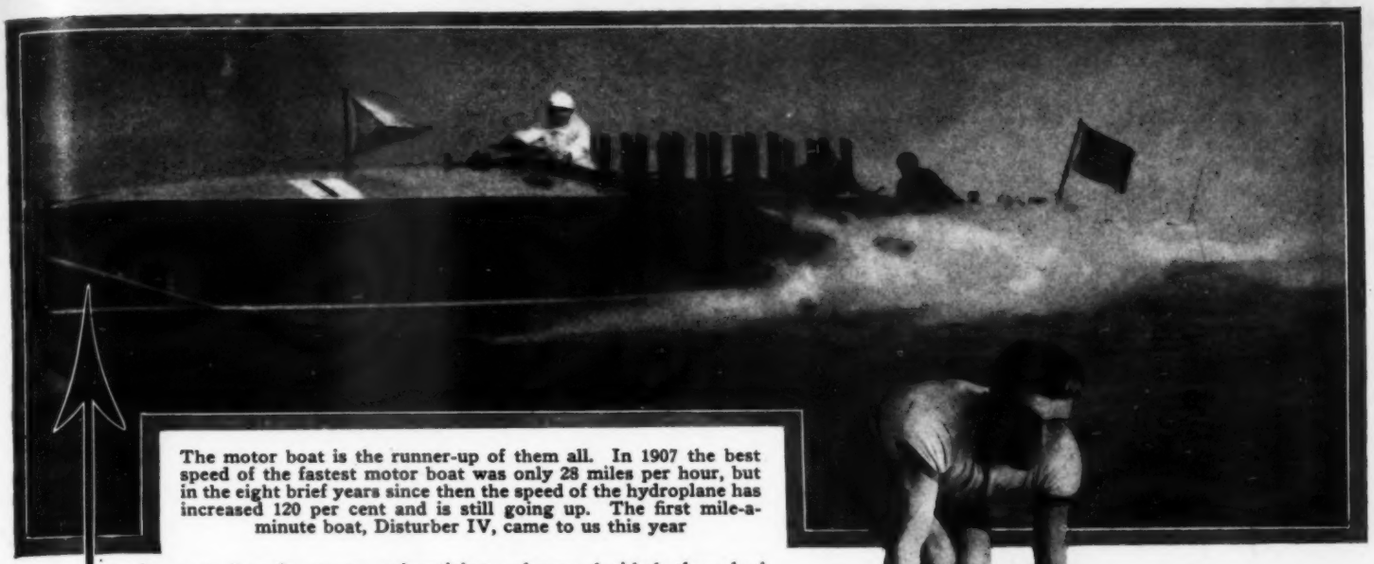


The battleship speed record of 24.36 miles an hour is held by Wyoming and the champion cruiser Flyaway III, unbeaten in two years, with her maintained speed of 22 miles an hour would run Wyoming a close race





A man can run 100 yards in 9 3/5 seconds, which is at the rate of 21.4 miles per hour.—If the champion eight-oar crew could row for an hour at the rate they can row 4 miles, they would cover 12.7 miles



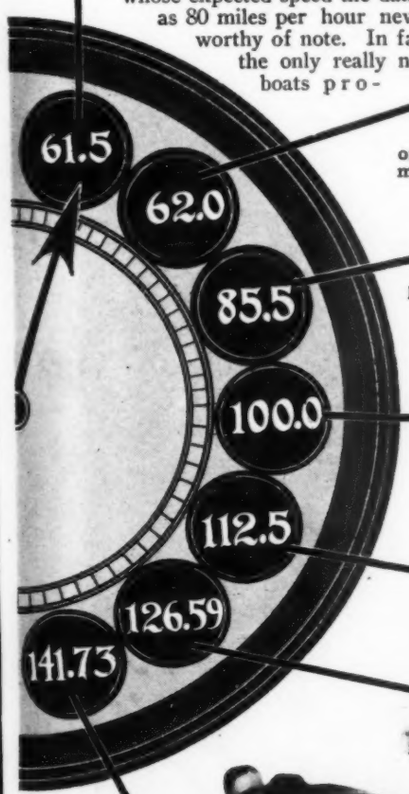
The motor boat is the runner-up of them all. In 1907 the best speed of the fastest motor boat was only 28 miles per hour, but in the eight brief years since then the speed of the hydroplane has increased 120 per cent and is still going up. The first mile-a-minute boat, Disturber IV, came to us this year

the race largely as an advertising scheme decided they had received about all the publicity which they could reasonably expect and cancelled the race with its $10,000 prize money a few days previously to the scheduled date of start.

Several hydros heralded earlier in the year as sure 60-milers failed to establish a claim to even the 1914 speed class. Ankle Deep, Peter Pan VI, Tiddledy Wink and one or two others whose expected speed the daily press featured as high as 80 miles per hour never did a thing worthy of note. In fact, about the only really new boats produced this year which could be called a success were Miss Detroit and Tech Jr., the former a 25-foot single step hydroplane with a 250-horsepower motor and the latter a 20-foot monoplane with a similar motor.

In the cruiser class Flyaway III of 1914 remains unbeaten another year—not an especially satisfactory condition of affairs. However, there were several boats faster than Flyaway III built, which made starts in races, but accidents put them out of the running. Express cruisers of the Houp-la type appear to have great possibilities.

(*A complete summary of the season's races will be found on page* 34)



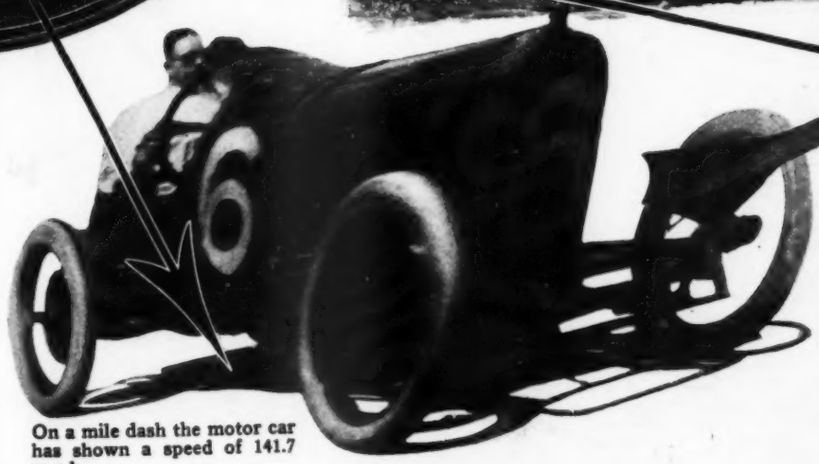
Kramer, paced by an automobile, rode a mile on a bicycle at the rate of 62 miles an hour in 1910

A homing pigeon has a record of 2,511 yards per minute as an average for a 100-mile flight. Reduced to miles per hour, this is equivalent to 85.5

The motor cycle speed record for one mile is 100 miles per hour

The Empire State Express has been clocked at 32 seconds for a mile, which is 112.5 miles per hour

The greatest speed made by an aeroplane is credited to Prevost, who in 1913 averaged 126.59 miles per hour



On a mile dash the motor car has shown a speed of 141.7 m.p.h.

The MOTOR BOATMAN and the New U.S. Coast Guard

Powerful searchlight used by the Coast Guard for picking up vessels at night

What the Consolidation of the Life Saving and Revenue Cutter Service Means
How the Coast Guard Service Will Benefit the Motor Boatman

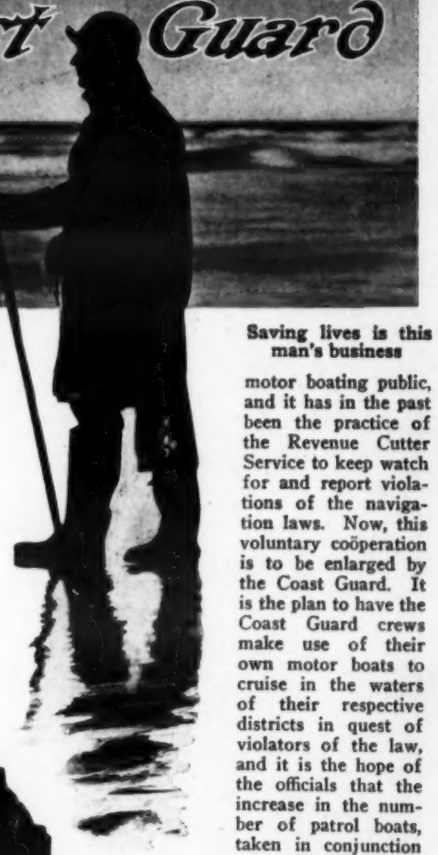
By Waldon Fawcett

TO the average motor boatman the creation of the new U. S. Coast Guard by the consolidation of the existing Life Saving Service and the Revenue Cutter Service may contain no hint of new or additional usefulness in behalf of motor boating. In truth, however, the attainment of a new status by the Governmental patrol and protective service on our far-flung seacoasts, Great Lakes and principal inland rivers is of the greatest significance to the skippers and engineers of the pleasure fleet. To be sure, the realization of this significance must wait upon the working out of certain ambitious plans but just formulated for the development and extension of the Coast Guard, though from the very outset motor boating interests may enjoy certain distinct benefits from the recent act of Congress.

First and foremost of the immediate gains are those resultant from having the "police of the sea" and Uncle Sam's maritime "first aid" squads welded into one compact, harmonious organization, controlled from one administrative headquarters. Just as a hint of the ways in which this may be expected to work out to the advantage of motor boating it may be instanced that the new arrangement is counted upon to spell efficiency in keeping the courses clear at regattas, race meets, etc.—a task that has heretofore devolved upon the Revenue such benefits, and this merger was duly accomplished with the sanction of Congress a few months ago.

Already the stimulus of the new incentive to service has been felt in that branch of the organization for which it was designed. No longer are most of the applicants for positions at isolated life-saving stations "beachcombers" or novices whose inexperience renders them, as an official recently expressed it, "as much of a menace as the waves to their fellow members of the crew." With slightly increased pay immediately available, with allowances for uniforms, etc., and with the aid. It is contemplated that the Navy Department shall establish wireless stations at comparatively short intervals along our coasts, which, in turn, will be in direct communication by telephone with all the Coast Guard stations. Thus, a call for help from any boat equipped with a radio outfit or a report of a disaster from any beach patrol will be sufficient instantly to call into play the facilities of the Coast Guard best adapted to cope with this particular emergency. Moreover, it

Already there are a number of motor lifeboats in the service, and it is expected that wherever practicable replacements of the oar-propelled boats by these efficient craft will rapidly be made



Saving lives is this man's business

motor boating public, and it has in the past been the practice of the Revenue Cutter Service to keep watch for and report violations of the navigation laws. Now, this voluntary coöperation is to be enlarged by the Coast Guard. It is the plan to have the Coast Guard crews make use of their own motor boats to cruise in the waters of their respective districts in quest of violators of the law, and it is the hope of the officials that the increase in the number of patrol boats, taken in conjunction with the circumstance that the light-draft motor boats can penetrate many waters not open to the revenue cutters, will result in more careful observance of the regulations that are intended to conserve life and property in the motor boating sphere.

Among persons competent to compare the

This war-like scene depicts a Coast Guard crew at peaceful practice-firing with a line-carrying projectile

Cutter Service. A criticism sometimes passed upon the management of motor boat speed contests was that the Revenue officials were apparently not able, with the facilities at their disposal, to keep the courses clear of excursion craft, etc. Now, with an augmented force and with opportunity to requisition for patrol duty the motor lifeboats and surf-boats at the Coast Guard stations, the task of keeping a clear stretch of water for the speedsters should be simplified.

Highly important, too, is the improvement of the personnel of the crews at what formerly ranked as life-saving stations, but will henceforth be known as Coast Guard stations. This, indeed, to let the reader into a secret, constituted the chief motive for the creation of the Coast Guard. For years past maritime interests, including the motor boating contingent, have been petitioning Congress in justice and in recognition of their loyalty to duty, to accord members of the U. S. life-saving crews equal treatment with other public servants by fixing a retirement age, granting pensions, etc. However, all these pleas fell upon deaf ears at the Capitol, although it was repeatedly pointed out that the most desirable class of men could not be enrolled and retained in the life-saving service so long as no provision was made for their support in old age or for the relief of their families when life-savers died in the line of duty. Finally, the suggestion presented itself that this long-sought end might be attained by merging the life-saving corps with the Revenue Cutter organization, the members of which already enjoyed promise of pension or death benefits definitely made, a superior class of men is being attracted to the service and the benefit of this better brain and brawn in the life-boats is liable to be brought home to any motor boatman in a crisis.

How the breeches buoy is used in rescuing lives from ship-wrecked vessels

Apparently, the future holds much for the Coast Guard, although some of the plans that touch most intimately motor boating interests are as yet purely prospective. One outcome that is assured is close coöperation between the Coast Guard and the U. S. Navy in the conduct of a coast patrol and intelligence service. The especial significance of this, for motor boating interests, will be found in the provision of the better facilities that will be afforded for reporting boats in distress and for summoning

Every night for ten months of the year a vigilant patrol of our dangerous coasts is made by the Coast Guardsmen

has been all but decided that in order to make the new organization a coast guard in fact as well as in name, each Coast Guard station shall be equipped with an up-to-date rapid-fire gun, and each erstwhile life-saving crew shall be drilled as a machine-gun crew, so that, in time of war, they might cope with a small landing party that might come ashore to cut cables or perform other minor depredations.

Whereas, the inauguration of the Coast Guard will bring certain distinct benefits to American motor boatmen, they may as well reconcile themselves to the fact that the appearance of this new exponent of Federal authority will likewise mean closer supervision of all motor boats to compel enforcement of the navigation laws with respect to the carrying of life preservers, equipment with fire extinguishers, display of proper lights at night, etc., etc. All such matters come, properly speaking, within the jurisjurisdiction of the Bureau of Navigation, a branch of the U. S. Department of Commerce, and do not enter, according to law, into the responsibilities of the Coast Guard, which is a branch of the Treasury Department. However, the Bureau of Navigation has very limited facilities for enforcing compliance with the laws by the

American organization with somewhat similar institutions abroad, it is the unanimous opinion that the new U. S. Coast Guard is without a peer in the world, particularly with respect to the service that may be rendered to small craft, such as motor boats. In its new dignity the Coast Guard has its land and sea force enrolled like soldiers and sailors, with parallel emoluments for service and rewards for distinguished deeds, and with all the advantages that accrue from military and naval discipline, but with a purpose solely humanitarian, namely, the saving of human life and property. Here are men who instinctively know something of the problems that suddenly confront the motor boatman in the event of accident, fire, explosion or other emergency, because they (or a large and rapidly increasing proportion of them) are called upon to operate motor boats as the vehicles of their relief work, with all intricacies from the storage of gasoline to the manipulation of the wheel. Incidentally it may be noted that Representative Thatcher, of Massachusetts, who was one of the ardent champions in Congress of the plan for the creation of a Coast Guard, recently remarked that the failure of the old Life Saving Service, with its limited opportunities to attract the type of young men who would make ideal surfmen, was due in no small part to the fact that this class of young men have been able to secure more satisfactory and more remunerative employment as motor

(*Continued on page* 54)

YESTERDAY'S SPEED BOATS

The Natural Trend in Hull Design From the Time When Fifteen-Speed is Only Fair for the Runabout—The Changes

By Frederick

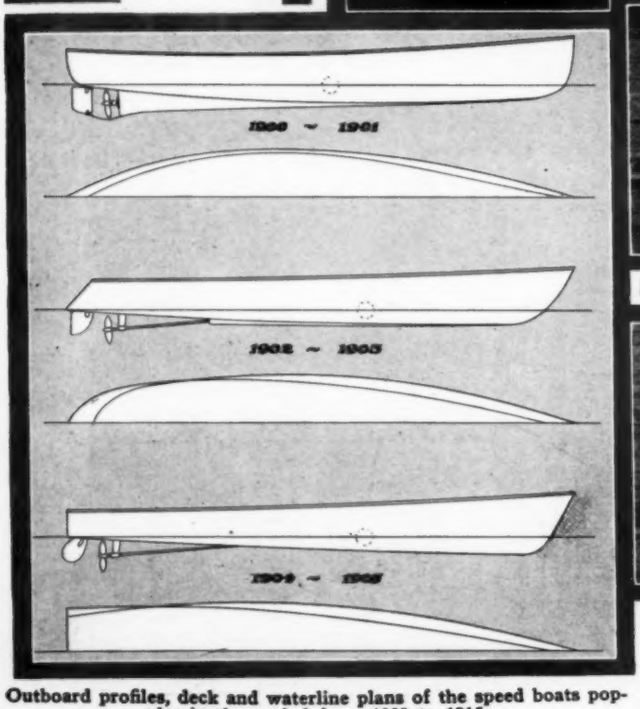
MOTOR BOATING as a sport began about 1900. In that year quite a number of boats appeared, ranging in length from 30 to 45 feet, and having engines of 10 to 20 h. p. The speed was generally about 8 miles and the fastest around 10. The majority of the hulls were of what is now called the fan tail stern type, following the conventional design of the small stern launches in use at that time. A year or so later the speed was increased to about fifteen miles with a resulting change in model. The old type of hull squatted and did not drive well and was obviously unsuited for the purpose.

The next two years were spent in attempting to overcome the difficulties caused by increased power and speed, and it was at this period that designers began to get away from the conventional and evolve a special type of hull suitable for the new conditions. The first thing they did was to sharpen the entrance and flatten the run to prevent the excessive bow-lifting and squatting of the stern. Two new types of stern were used, the flat or transom stern, now generally adopted and the so-called compromise or canoe stern coming to a point with slight overhang and being fairly flat underneath. This stern was finally found insufficient in surface properly to hold up the fastest boats of short length and the transom stern was used more frequently.

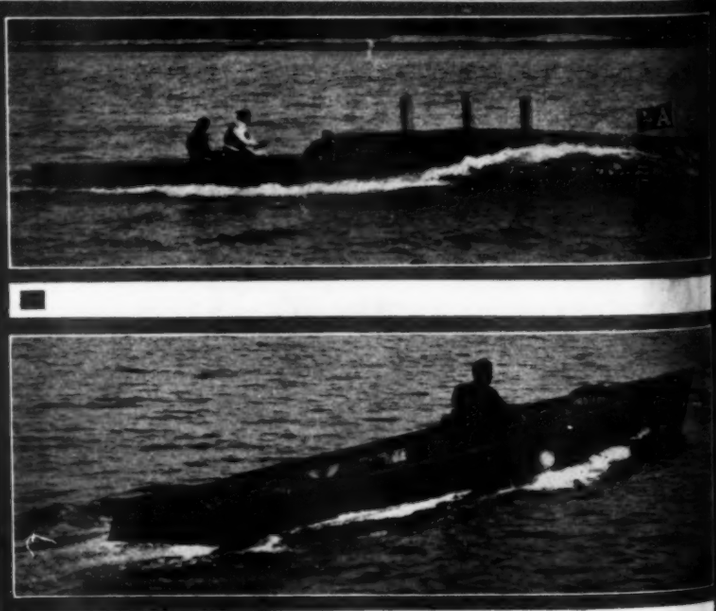
In 1903 the double wedge type was brought out and marked a distinct epoch in motor boat design. The water lines ran with continually increasing width to the stern in almost straight lines and the buttock lines were started at a deep forefoot and ran in straight upward lines to the stern. This produced a boat of sharp form forward and a broad flat stern and allowed the boat to run on her lines; this principle, modified, is now used in nearly all launches not driven at hydroplaning speed.

The next year saw the real awakening of motor boat racing as a sport and many boats were built and raced with keen interest. Everybody had his own idea about models and every boat was different at this time. Many speed boats were built, the Fiats, Panhards, Shooting Stars, Hard Boiled Egg, Japansky, Mercedes, Dolphin, and others all being historical as motor speed boats. Later came boats, Vingt-et-un II, Challenger, and Dixie, representing a still further advance in design and crystallizing the problem of high speed form.

In those days when such excessive power as is used in small boats was believed impossible and hydroplaning was unknown, everybody believed that a boat would go faster through the water than over, so the models were all very sharp and narrow, and had the motor placed well forward, every effort being made to keep the bow down and make the boat run on a level trim. This caused excessive resistance forward, and the boat tended to relieve it by lifting out. Designers considered this a bad sign and tried to prevent it, failing to perceive that nature was pointing to the solution of high speed. One of the chief defects of these early boats was the treatment of the buttock lines. On the theory that the water ran around the boat more than under, the water lines and diagonals were made easy and the buttock lines were rather neglected. They had too much of a rocker to them—that is, they were too deep amidships and ran up to the transom at too steep an angle. This resulted in a phenomenon which was not clearly understood at the time—namely, that a boat running at high speed would rise out, settle down and change trim until the run or buttock lines of the boat were parallel with the surface of the water. The more the run was cut up the more the boat would change trim and the designers made the mistake of sharpening and weighing down the bow to prevent it instead of flattening the run. Thus they produced an evil at



Outboard profiles, deck and waterline plans of the speed boats popular in the period from 1900 to 1915



Speed boats of the earlier period—Japansky, which with a 4-cylinder Speedway motor astonished the world with a speed of 20 miles per hour in 19[illegible] Bullet, powered with a Winton motor, which was built in 1903 and achieved considerable fame, and Dolphin II, which with a 25 h.p. Standard motor in a h[illegible] of the extreme double wedge type could do 18 miles an hour

TO-DAY'S RUNABOUTS

Knots Was the Speed Boat Limit, Until To-day When Double This in Sheer, Deck and Water Lines in This Period

K. Lord

the stern, and resorted to an evil at the bow to overcome it. The theoretical distribution of displacement undoubtedly influenced the design, and such an arrangement of displacement as is used on high speed boats now would have seemed very undesirable. Had the weight of some of these early boats been placed further aft and the hulls allowed to take their natural trim they would undoubtedly have been faster. As the power and speed of small boats increased, the hulls were made flatter to keep them running level until things came to such a pass that it could not be done; about this time it began to dawn on people that after all perhaps a boat could be made to go over the water faster than through it.

With the serious acceptance of this principle began the epoch of the hydroplane and the high-speed runabout.

The designers ceased trying to run their boats in the conventional way and let them rise forward. The increase in speed was apparent. Speed was still further increased when it was found that the transom could be submerged considerably without dragging. The next improvement was to move the weights and center of buoyancy aft, thus reducing bow spray and making the boat lighter at the head. After this it became evident that with power enough the boat could be lifted and driven over the water, and the era of the hydroplane was on.

From the hydroplane we have gone back again to the displacement boat, and incorporated the principle in its design, producing what is now called the displacement planer, a boat that will run through the water with good efficiency at moderate speeds and rise and plane when driven hard.

The salient features of the fast runabout are a hull of moderate freeboard, rather straight sheer, fairly plumb ends and a rather broad flat transom. The engine is placed nearly amidships under a hatch, with the crew aft. The deck line is full forward with considerable flare. The forebody under water is slim, the run flat with a submerged transom and the center of buoyancy pretty well aft. The boat is designed to lift and skim, but the hull is so arranged as to mask this appearance somewhat and not give the impression of running out of trim or squatting.

Regarding the underbody, the so-called V-bottom sections are mostly used. At the higher speeds the hollow V section as developed by Fauber seems better, as the entrance can be arranged more satisfactorily and the spray thrown lower.

While the V is fast and dry at high speeds it has been the writer's experience that the claim of universal dryness at any speed is unfounded and that there are many splendid-going round-bottom boats equally as dry and dryer at all speeds. So long as a V-bottom boat can keep the spray off the side she is dry, but the minute the water draws around the edge of the chine, she is more than wet. There is a sharp line of demarcation here which is not present in the round-bottom boat, and the latter is of course the handsomer, allowing as it does, much more latitude in modeling. These boats easily stand hard driving and big power. A 26-foot hull can stand 100 h. p. and do 35 miles with entire practicability.

There can be no doubt that the successful solution of the high-speed open launch or runabout has done a great deal to increase the popularity of motor boating. The speed of early days was so limited that it took hours to get anywhere. Nowadays, it is a perfectly simple matter to maintain thirty miles an hour, a speed that will make a modern automobile hustle to maintain on the average road.

While the motor car has made inroads on the sport

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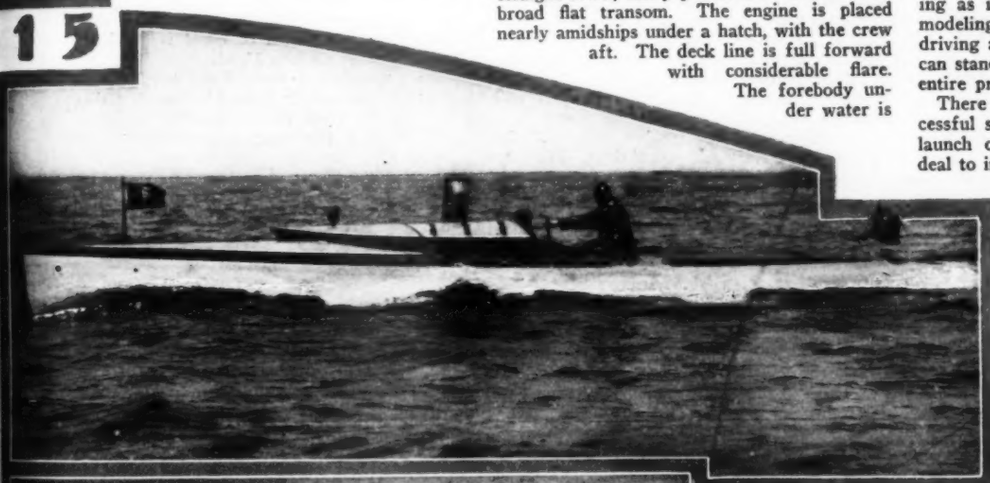
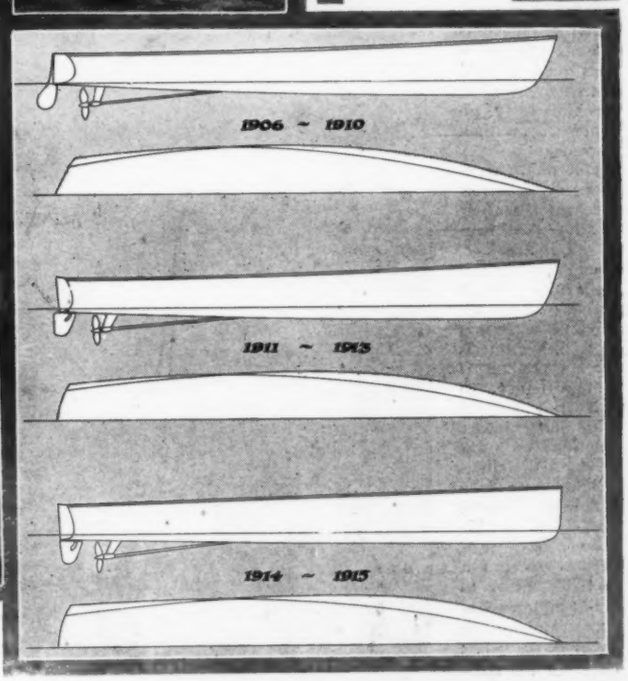


Motor boats of the later period—Panhard II, with a 75 Panhard motor, which made the then phenominal speed of 26 miles per hour in 1906; a typical 30-mile runabout of the period of 1911-1913, and the displacement runabout of 1914-1915 which travels along at a speed of better than 35 miles an hour under ordinary conditions



Sketches showing the fundamental characteristics of the runabouts built during 1906 to date

Are Motor Boatmen Superstitious?

By John Aitken

SUPERSTITION holds mankind in chains that time can never break, even though it be an inheritance of ignorance, a stamp of primitive conditions, and a badge of servitude to harsh circumstances. We are all hampered in this way to different degrees, but if there is any class of people who are slaves to this condition more than any other, it is the sailor class, and they have more reason for being so than any other.

The sailor is constantly surrounded by the sublimest of all mystery—the open sea. He has the wide expanse of ocean, with its uncertainty, the extreme depths of the water to fill his mind with wonderment; the ever-changing aspect of the sky, the awful roar of the tempest, the lightning's flash against truly fearful backgrounds. One day it is calm; the next the navigator's ship is being battered by mountainous masses of water and forced into deep hollows of the sea by tornado winds, or whirled to destruction in mighty maelstroms.

Is it any wonder, then, that a seaman's mind is in a condition to accept anything, when nature has ready at all times such fearful forces to crush him, and when the only thing between him and these forces and death is the planking on which he walks?

The superstition of sailors goes back hundreds of years, when navigators looked upon the depths of the sea as peopled with the strangest forms. Monsters of all sizes and shapes were lurking there, in their imagination, to take hold of their ships to pull them to the bottom. The early sailor had no science, and whatever he lacked in this way was supplied by his imagination. On seeing an octopus, for example, he fancied other and more greatly hideous creatures existed. In this way he saw the ocean.

Though many seamen are irreverent and do not believe in God, they nevertheless think some unknown power sends its warnings to them. Thus, they believe in omens of coming storms, shipwrecks, etc.—everything has a meaning to them. Gulls give notice of a change of weather, and the stormy petrel follows vessels before and during a hurricane. On sighting an albatross, the sailor is assured of calm, pleasant weather. Rats desert ships before the last voyage. This is a sure sign of the destruction of the ship to sailors, and if they can possibly get ashore, they will not go to sea in this vessel. Friday is unlucky to them, because it was the day of the Crucifixion; Sunday, fortunate, because this was the day of the Resurrection.

It is unlucky for a sailor to meet a woman on the way to his ship, for the reason that Eve brought sorrow on man, and will do so on the coming voyage. As a rule, a seaman will not go to sea on a vessel on which a man has been murdered, nor ship on one, the name of which has been changed. He also believes certain ill luck will follow the ship should a man have been killed or hurt during its launching.

A sneeze is considered fortunate, as, before Noah no man sneezed but once, and it killed him, but, after that patriarch, the children of men, as a special favor, were allowed to sneeze as often as they pleased, provided they offered benediction in memory of former evil consequences.

The follower of the sea has other unlucky days besides Friday and saints' days. The first Monday in April is bad; it was Cain's birthday. The second Monday in August is bad, for on that day Sodom and Gomorrah were destroyed. The thirty-first day of December is worst of all, as on that day Judas hanged himself. To work on St. Peter's day is unfortunate, because St. Peter is the patron saint of sailors and fishermen. And the seaman has a horror for the thirteenth of each month.

An eclipse is a portent of evil, but a meteor means luck. The Aurora Borealis signifies disaster. The cat washes its face before a storm. If an albatross should accompany the ship it will mean bad luck, yet, to shoot it, means certain shipwreck. But the albatross may be caught by a piece of pork on a hook and brought to deck to die, without disaster.

Should a land bird light on the yards it is fortunate, but it must not be caught. A cat is bad, especially a black one. The sailor can relate when such an animal caused the wreck of a vessel and loss of life. Crows or ravens are unfortunate should they light on tackle. Should such a thing happen before sailing, the sailor will try to desert, and if he cannot he will bemoan the fate before him.

Most sailors carry charms against storms. A bit of sea calf's skin protects them from lightning, though a fox tail, gull's wings, or eagle's beak, or a shark's tooth are equally good. They like sea shells to protect them from shipwreck, though a bunch of coral is good for this as well as to stop bleeding.

These are only a few of the hundreds of superstitions in which sailors believe, but they bear out the truth of my opening assertion that they are the most superstitious of all people.

Removing the Bubble

By A. D'A. McNevin

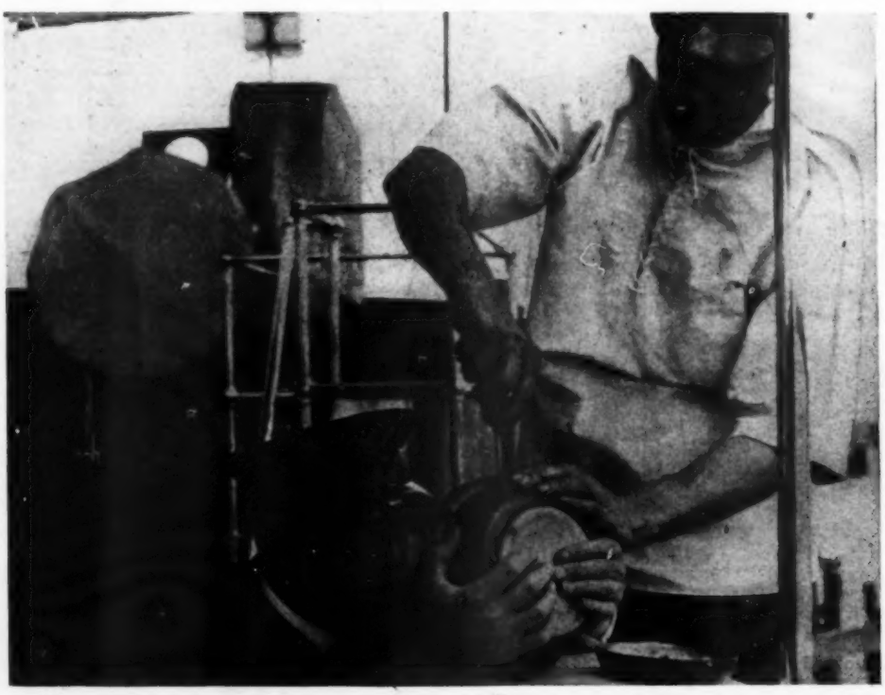
NO one should hope nor expect to steer a good course by a compass with a bubble in it. The motion of a boat in a seaway agitates the liquid in the bowl, and it is impossible for the card to stay at rest, as it should, in the meridian, under these circumstances.

Even in comparatively smooth water a bubble is a menace to a compass and should not be tolerated at any time if for no other reason than its unsightliness.

One of the commonest ailments of a compass, and one of the most neglected, is a bubble, and the natural remedy for it seems to be to fill the bowl when it is treated, but this is wrong. Filling it quite often (even when it is filled with the proper solution) only aggravates the situation and makes a bad matter worse, and when a wide change in the temperature occurs it is liable either to burst the expansion chamber or crack the glass cover of the compass.

The best corrective for an erroneous compass is a careful and competent and an attentive captain. He should remove the false bottom of the compass bowl to expose the expansion chamber and bring the bubble directly under the filling hole by placing the compass on its side. Then press the expansion chamber, and while keeping a constant light pressure upon it with the fingers gradually unscrew the cap in the filling hole to let the air escape around the threads of the screw. Do not remove the screw altogether, but just loosen it enough to force the air out. When the liquid begins to run, tighten the screw quickly so as to prevent too much of the liquid from escaping from the bowl, and remove the pressure from the expansion chamber.

In a few attempts to remove the bubble in this way are unsuccessful then the instrument is no doubt in need of repairs by a skillful hand at the factory. Air is entering through pores in the metal or through the packing. Perhaps the expansion chamber is cracked, or some one of a dozen things may be wrong with it which needs correction by an expert with proper facilities and tools for making repairs.



Method of removing the bubble from the compass

U. S. Aids Amateur Navigators

The Vast Amount of Information Published by the Department of Commerce Which is Furnished Gratis—The First of a Series of Articles on Simple Coastwise Navigation

ONE of the many things which interest every motor boatman, or at least should interest him, is the subject of simple coastwise navigation, or what might be more appropriately called piloting. In order to successfully navigate any small motor craft along the thousands of miles of our sea coast, or in and around the numerous bays and harbors, it is not necessary for the motor boatman to provide himself with an expensive set of navigating instruments, such as is necessary for deep sea navigation, but there are a few of the more simple instruments and other requisites, which should be aboard every craft, whether she goes out of sight of land, or not. The cost of such instruments is trifling—in fact, many of them can be home made, which with a little care can be made to give as accurate results as the more expensive and refined instruments will under ordinary conditions.

Among the requisites necessary for this simple coastwise navigation, it is hardly necessary to enumerate the more common ones. Every motor boatman knows that he should have on board for successful piloting the best available chart of the locality to be traversed, together with the sailing directions and description of the aids to navigation, and it is equally important that all of these should be corrected and brought up to date.

But the question is how to procure these sailing directions, charts, information about aids to navigation, etc., and principally how to keep them up to date. Few motor boatmen realize that the various departments of the United States government are doing all this work for them, and most of this information can be had for the mere asking.

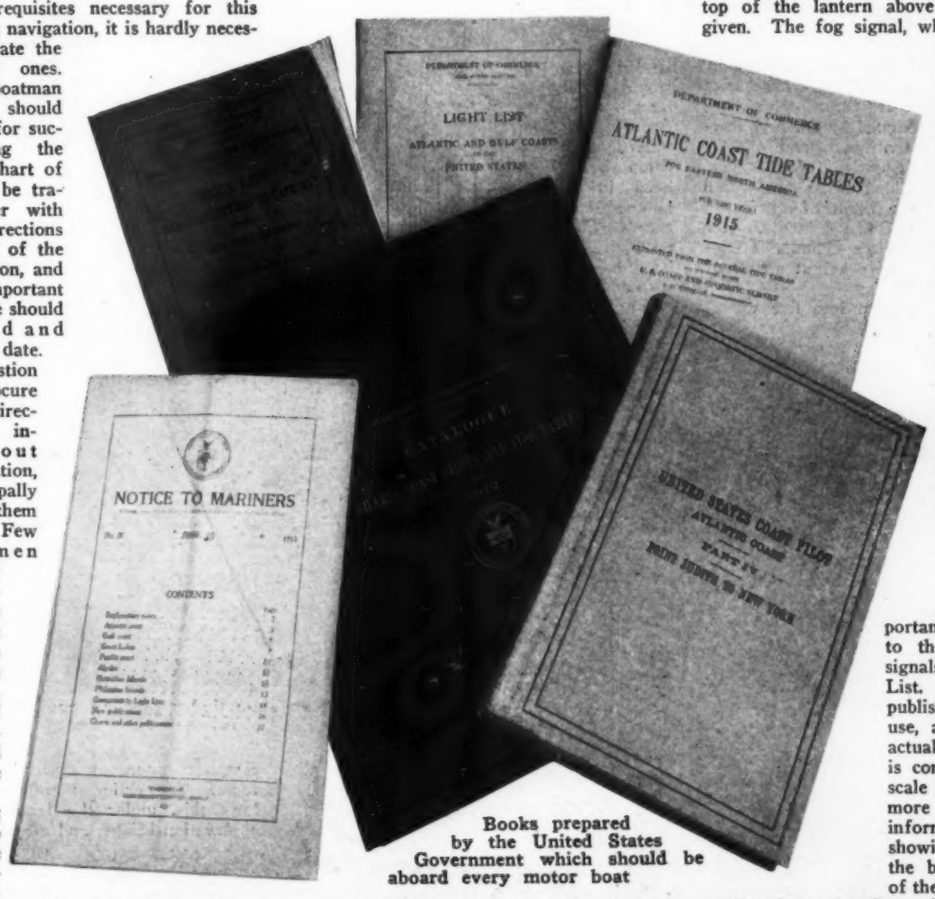
Keeping one's charts up to date is more or less of a serious and expensive question for the government, and unfortunately a majority of the government charts cannot be furnished gratis to everyone, but after the original chart has been purchased by the motor boatman at a price which is the actual cost to the government of producing it, he is sure that the chart will last him many years to come, and still be up to date if he cares to take the pains to keep it so.

• Every Saturday the Bureau of Lighthouses and the Coast & Geodetic Survey publish a pamphlet which shows in detail every change which has been made to any aid to navigation during that week, or which it is proposed to make in the near future, together with much other valuable information, such as newly discovered rocks and shoals, and information in regard to shifting bars, new publications, lists of new editions of government charts, together with a list of canceled editions, etc. This pamphlet, which is known as the Notice to Mariners, is distributed free of charge to any motor boatman who will apply for it to the Division of Publications, Department of Commerce, Washington, D. C.

The items in the Notice to Mariners are arranged in geographical order, starting with the eastern coast of Maine, continuing south to the Gulf Coast, then giving information in regard to the aids to navigation on the Great Lakes, Pacific Coast, Alaska and the Philippine Islands. It clearly shows the numbers of government charts on which the change occurs, the page numbers in the Light List, Buoy List and Coast Pilot as well. For example, the Notice to Mariners of Sept. 10th gives notice that the characteristics of the light of the canal approach gas and bell buoy located in Cape Cod Bay are to be changed on Sept. 24th, to a flash every six seconds, but with no other change. It also states that this change must be noted on Coast & Geodetic Survey Charts, No. 1208, 1107 and 1000; that the Light List for the Atlantic Coast edition of 1915 must be corrected on page 42, Light No. 182; that the Buoy List for the second District, edition for 1914, must be corrected on page 29, and that Part 3 of the Coast Pilot must be corrected on page 58. This notice is further arranged so that the corrections can be clipped out of the Notice to Mariners and pasted in the particular Light List in its proper position. All of this information is sent out every week by the government free of charge to any one who is interested enough to have his name added to the mailing list.

The Department of Commerce publishes annually a Light List for the Atlantic and Gulf coasts which includes all lighted aids to navigation maintained by or under the authority of the United States Lighthouse Service. The Light List includes lighthouses, lighted beacons, light-vessels, lighted buoys and fog signals, but not unlighted beacons or buoys. In order to increase the convenience of the list to boatmen following or approaching the coast, the coast lights are printed in heavier type.

The Light List, which is also furnished free of charge, gives the name of each light and its character and period of light—that is, whether it is fixed, flashing, group-flashing, occulting, alternating, etc. It states the location of the light, for example, "in 6 fathoms, off the northern point of Iron Bound Island," and further gives the latitude and longitude of the more important coast lights. The height of each light above the sea level, the miles it is visible and the candle power light are also included. A description of the structure, light vessel or buoy with the distance of the top of the lantern above the base is also given. The fog signal, whether it is a bell, horn or trumpet, and the number of strokes or blasts and the interval between them are valuable and necessary information for every motor boatman, which will be found very conveniently arranged in the Light List.



Books prepared by the United States Government which should be aboard every motor boat

The Lighthouse Service also publishes and supplies free of charge, separately for each lighthouse district a Buoy List which gives a list of all buoys in that district, both lighted and unlighted, as well as all other aids to navigation. The Buoy List does not give as much and as important information as to the lights and fog signals as does the Light List. The Buoy List is published more for local use, and as far as the actual location of buoys is concerned, the larger scale charts are a much more certain source of information. Besides showing the location of the buoys clearly, most of the government charts published by the Coast & Geodetic Survey contain all the necessary facts regarding the buoys. Moreover, the individual charts are corrected up to the date of their issue by the government, while the Light and Buoys Lists can only be brought up to date by the government when a new edition is published.

The Atlantic and Gulf coasts are divided up into nine lighthouse districts. The first district includes the waters of Maine and New Hampshire; the second district, the waters of Massachusetts; the third district, Rhode Island, Connecticut, New York, New Jersey and a part of Delaware; the fourth district includes Delaware Bay, river and coast. The fifth district includes the waters of Maryland, Virginia, and a part of North Carolina, and the sixth district from New River Inlet, N. C., to Hillsboro Inlet Light Station, Fla. The

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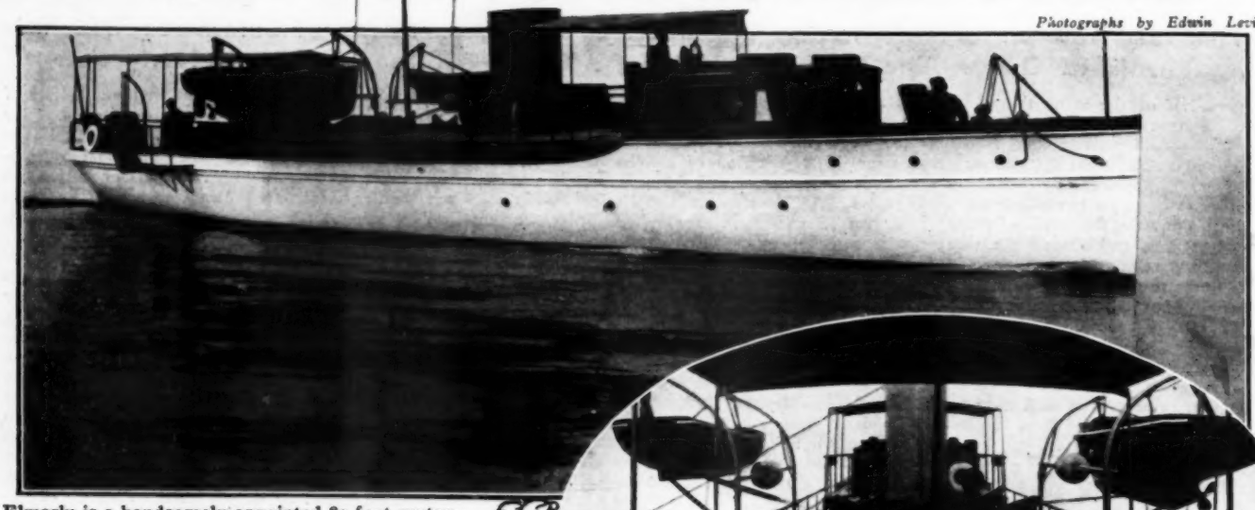
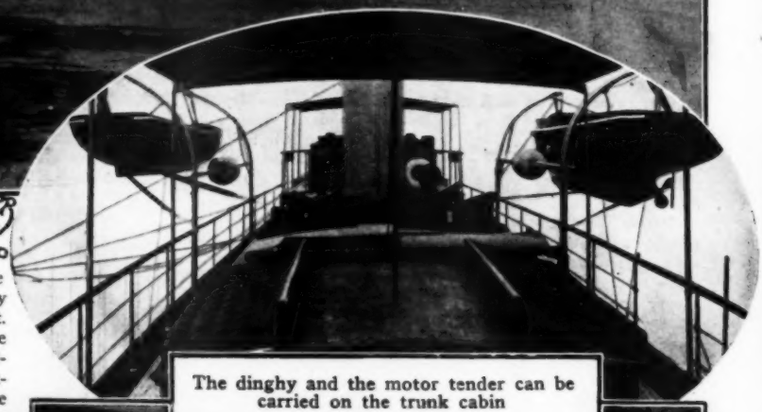
Elmarlu, a Twin-Screw Cruiser.

Photographs by Edwin Levick



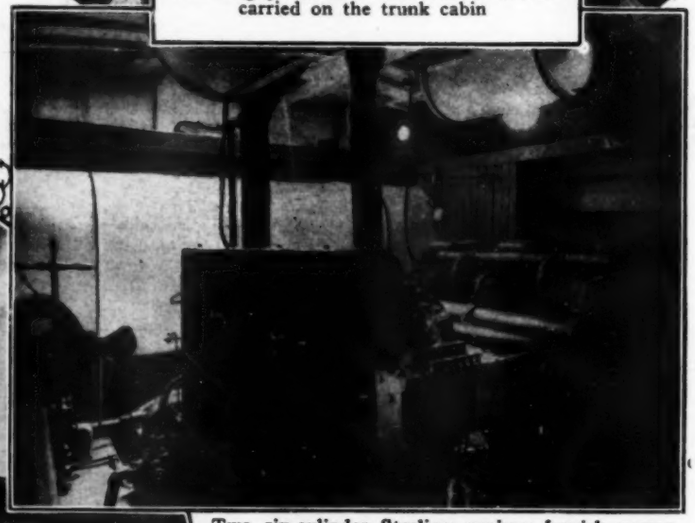
Elmarlu is a handsomely-appointed 80-foot motor yacht



The dinghy and the motor tender can be carried on the trunk cabin

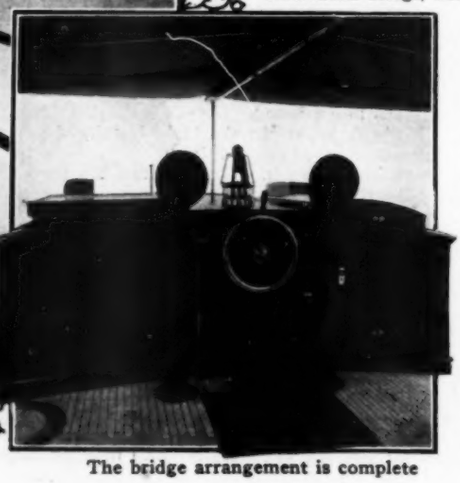
ONE of the most pleasing of the rapidly growing fleet of cruisers whose lines suggest the swift torpedo boat destroyer is Elmarlu, designed by Swasey, Raymond & Page, of Boston, Mass., and built by Nevins for James H. Ottley, of the New York Yacht Club. Elmarlu has an overall length of 80 feet by a beam of 13 feet 3 inches and a draft of 4 feet 6 inches. Her twin screws, turned by six-cylinder 6½x9-inch Sterling engines, drive her at a rate of about 13 miles per hour.

Elmarlu's hull is divided into five watertight compartments, and it is stated that with any compartment or perhaps two compartments flooded she would easily remain afloat. Aft of the watertight collision bulkhead in the bow are the crew's quarters with berths for four men, toilet room, captain's stateroom, officers' mess and store room. The galley, unusually complete, follows this, under the large navigating and observation bridge, and aft of this comes the engine-room which in addition to the two main motors, contains a gasoline tank with 550 gallons' capacity, a direct-connected electric lighting outfit, storage batteries, cylinder oil tank and other accessories.



Two six-cylinder Sterling engines furnish power for a speed of about 13 m.p.h.

The interior finish is in white enamel and mahogany



The bridge arrangement is complete

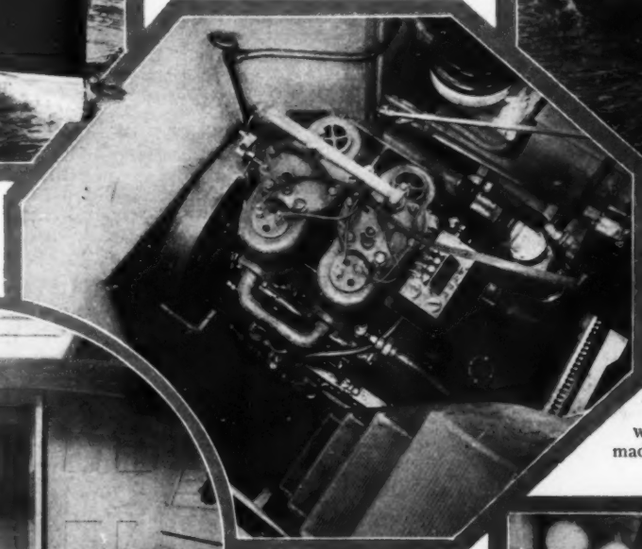
Following the engine-room is the owner's double stateroom, and separating this from the guests' double stateroom aft are a bathroom and vestibule. The cabin house forward of the bridge is nicely fitted out as a dining room and observation room.

A REAL OCEAN-GOING 40-FOOTER

Cero has made the season's most satisfactory cruiser from the race standpoint

FROM a racing standpoint, Cero, designed and built by the Lüders Marine Construction Co., of Stamford, Conn., has been the most satisfactory cruiser of the past season. Her rating is low, her speed is fair, her seaworthiness is unquestioned, while consistency is her middle name. Built specifically for the Bermuda race, which, through no fault of Cero's owner, W. P. Frost, was not pulled off, she nevertheless has played a prominent part in the season's racing and has walked away with first prizes in the Block Island event, the race around Long Island and the Cornfield Lightship contest. Her most recent victory was obtained over Com. Anderson's Gardenia in the port-to-port consistency race for the Wallace trophy. In this last event, through encountering a strong head tide, she was behind her pre-announced schedule at two of the reporting stations, but her advantage in rating over her competitor was sufficient to bring her home an easy winner.

Cero is just under the 40-foot length limit, her overall and waterline dimensions being 39 feet 11 inches and 39 feet 8 inches respectively. Her greatest beam is 9 feet 6 inches, and this generous beam has a good deal to do with making her seaworthy. The draft is 3 feet 9 inches. Her design is a little out of the ordinary for a boat of this length, there being a fairly sizable cabin trunk extending aft from the raised-deck section. A mast and boom are carried, and were it ever necessary Cero could show quite a spread of sail to help her out of a difficulty or steady her in a seaway.



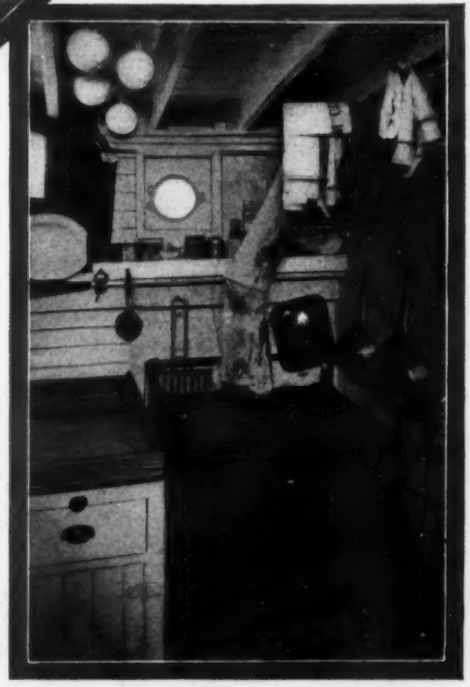
The 16 h.p. Mianus taken from an unusual viewpoint

The forward cabin and the bow toilet

The cabin arrangement shows a toilet in the bow, followed by a two-berth stateroom with skylight over. This stateroom opens aft into the galley, which is laid out with ice box to starboard and stove, sink and dresser on the port side. An entrance on the starboard side is provided into this compartment from the deck. Next aft and communicating with the galley comes the main cabin, fitted with a drop leaf table and two wide berths, and following this is the eingine-room in which is installed a 16 h.p. two-cylinder 6 x 8-inch Mianus motor. The motor compartment is bulkheaded off from the owner's quarters and is provided with a flight of steps on the port hand. Room for a toilet is found on the starboard side, an electric lighting outfit is installed, and every available inch of space has been utilized satisfactorily.

The gasoline tanks are located under the after deck, and in the fore peak, being arranged so as to avoid change of trim as they are emptied, and having a total capacity sufficient for 1,100 miles of cruising. The water tanks are under the stateroom floor. Altogether, Cero is a roomy, practical boat and one worthy of the racing name she has made for herself.

Photographs by Brown & Dawson



The galley, of good size, is well equipped

A 78-Footer with New Features

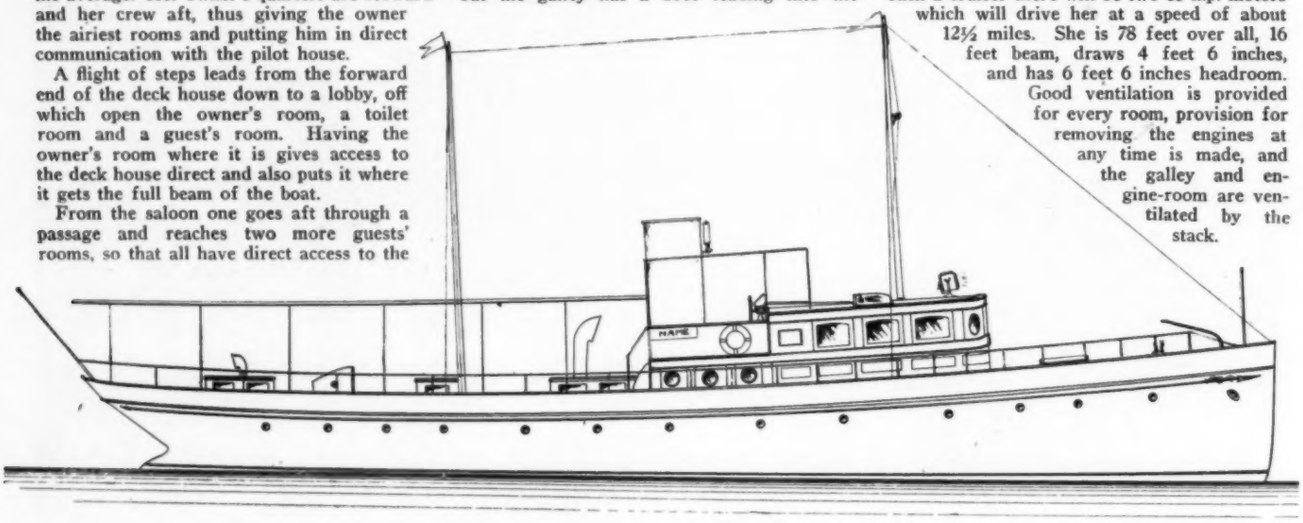
Laid Out with Owner's Quarters Forward, Engine-Room Amidships and Crew's Quarters Aft—Passageway on Starboard Side to Connect Guests' Staterooms with Saloon

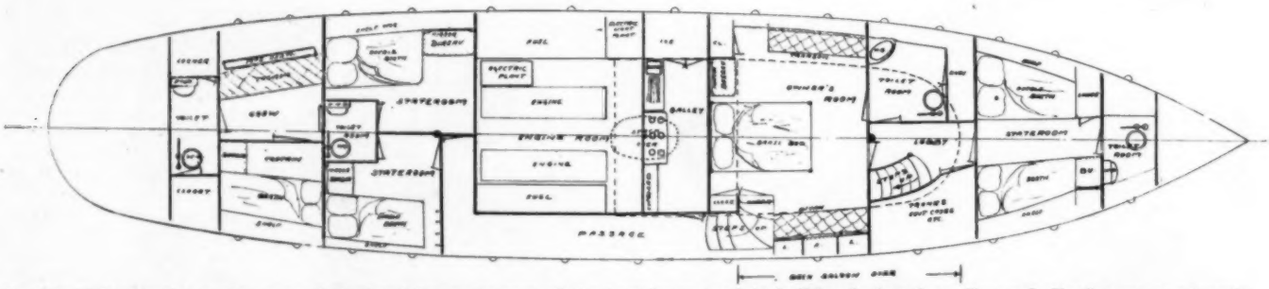
IN this design by William J. Deed, Jr., of Boston, Mass., is shown a comfortable motor cruiser which differs a little from the average. Her owner's quarters are forward and her crew aft, thus giving the owner the airiest rooms and putting him in direct communication with the pilot house.

A flight of steps leads from the forward end of the deck house down to a lobby, off which open the owner's room, a toilet room and a guest's room. Having the owner's room where it is gives access to the deck house direct and also puts it where it gets the full beam of the boat.

From the saloon one goes aft through a passage and reaches two more guests' rooms, so that all have direct access to the dining table from their rooms. This passage is along the starboard side of the engine-room and galley. The former is entirely separate, but the galley has a door leading into the passage and up the steps into the deck house dining saloon.

In addition to everything usually found on such a cruiser there will be two 65 h.p. motors which will drive her at a speed of about 12½ miles. She is 78 feet over all, 16 feet beam, draws 4 feet 6 inches, and has 6 feet 6 inches headroom. Good ventilation is provided for every room, provision for removing the engines at any time is made, and the galley and engine-room are ventilated by the stack.



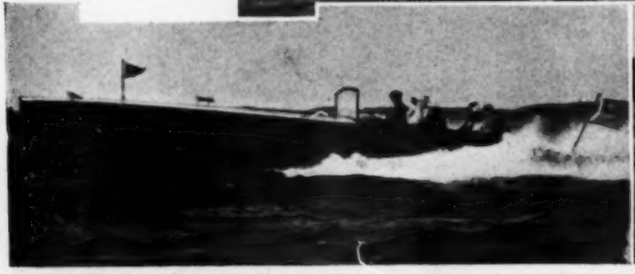


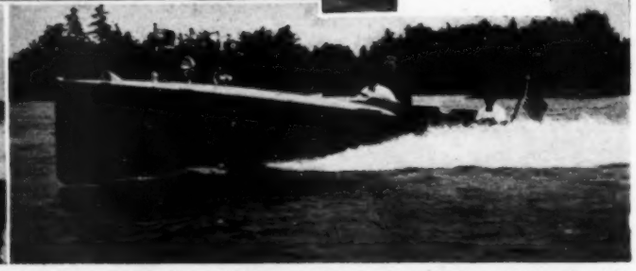
In this 78-footer the engine-room is isolated from the rest of the boat by watertight bulkheads, but the galley and all other compartments with the exception of the crew's quarters aft are interconnected

Three Fast Thousand Islands Runabouts

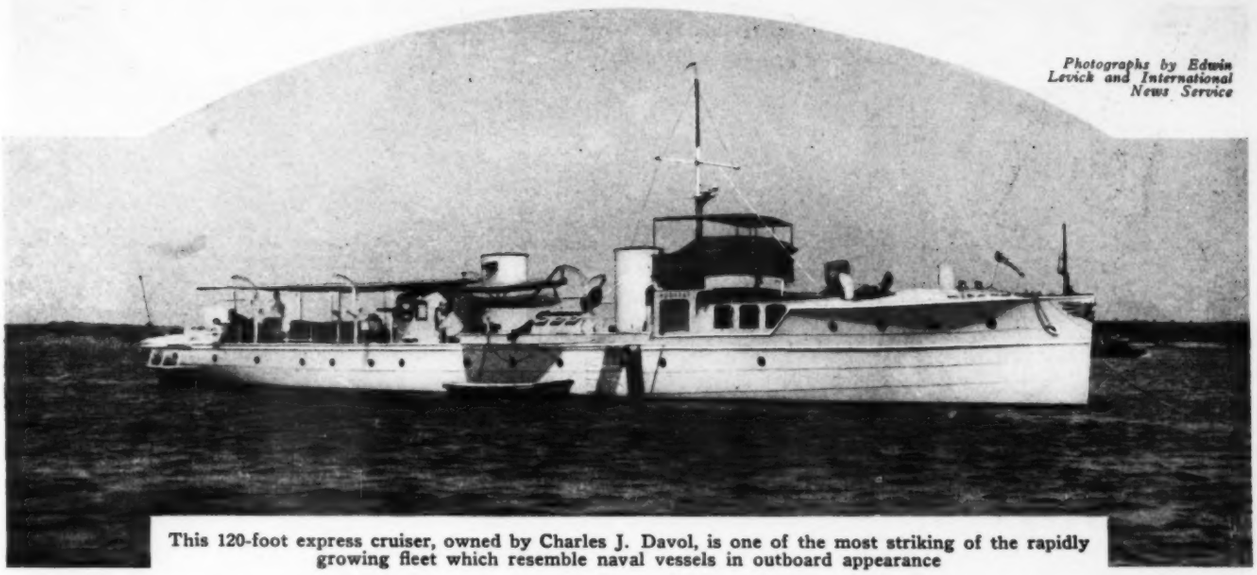
SEVERAL splendid new boats have been added to the large fleet in the vicinity of Alexandria Bay, N. Y., in the midst of the wonderful Thousand Islands district. The three craft illustrated below, all of them built by the Hacker Boat Co., of Albany, N.Y., and powered with Van Blerck motors, are indicative of the way popular taste runs when a speed of 30 miles per hour or over is desired. The uppermost boat, as may be seen from an examination of the bow, is Prunes, so named because her owner, George Howard, of Malone, N. Y., a wholesale grocer and quantity specialist in the boarding house staple, has been nicknamed "Prunes" by his friends, and desired to perpetuate the monicker. This boat, which is powered with a Model E-4 Van Blerck, is 28 feet in length and has a speed of 30 m.p.h.

The 32-footer on the right, E. L. S., is owned by E. Leonard Schreiber, of Cincinnati, and the remaining boat of the trio, R. I. L., is a 30-footer, owned by A. Blakewell, of Clayton, N. Y.





Of this trio, Prunes is a 28-footer with a four-cylinder motor, R. I. L., a 30-footer with six cylinders and E. L. S. (right) a 32-footer with an eight-cylinder machine, but all are Hacker runabouts and are powered with Van Blerck Model E motors



Photographs by Edwin Levick and International News Service

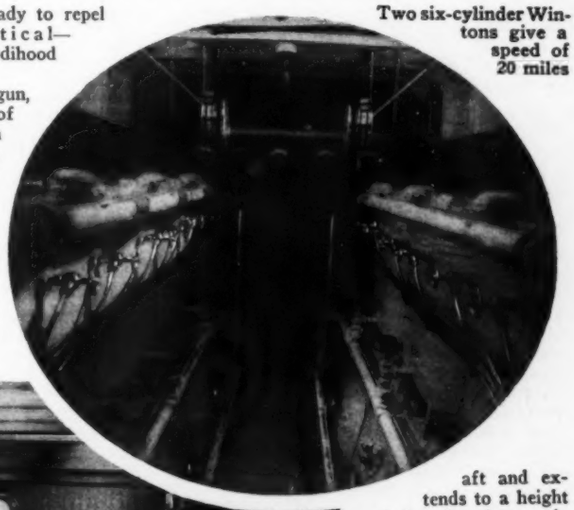
This 120-foot express cruiser, owned by Charles J. Davol, is one of the most striking of the rapidly growing fleet which resemble naval vessels in outboard appearance

A Real Destroyer-Type Cruiser

Resembling Uncle Sam's Fleet Naval Vessels in Many Respects, Paragon in Addition Has Mounted a Rapid Fire Gun, Which, However, is More Ornamental Than Useful

WE have been hearing much of late of motor cruisers of the torpedo destroyer type, and while some have resembled this unit of the navy in lines and speed, others resemble the fighting craft no more than does any boat given a coating of gray paint. However, on this page and the one following is illustrated a destroyer-type cruiser which appears to live up to its designation in every particular—angular lines forward, elevated bridge, low stacks and narrow beam. More than this, Paragon has a real, sure-enough rapid-fire gun mounted on deck. At first glance (in the illustration on page 20) this implement of naval warfare looks as if it might be a new-fangled telescope with which the boat's crew might endeavor to keep in sight as they dropped behind any competitors which were entered against her in a long-distance race; but, no, it's a genuine weapon of defense, polished and enameled, to be sure, to fit in with its surroundings, but grimly ready to repel boarders—summer or piratical—which might have the hardihood to face it.

Aside from the rapid-fire gun, the most important articles of equipment aboard Paragon are her two 200 h.p. Winton motors, installed in the engine-room amidships. These motors, having six cylinders each, with bore and stroke dimensions of 9 x 14 inches, drive twin screws and are able to give the boat a sustained speed of approximately 20 miles per hour. In addition to this formidable power plant the engine compartment contains also auxiliaries for providing the boat with electric current, pumping out the bilge, storing air, and ventilating the owner's quarters. The switchboard is mounted on the bulkhead aft and extends to a height of five feet by nearly the boat's beam.



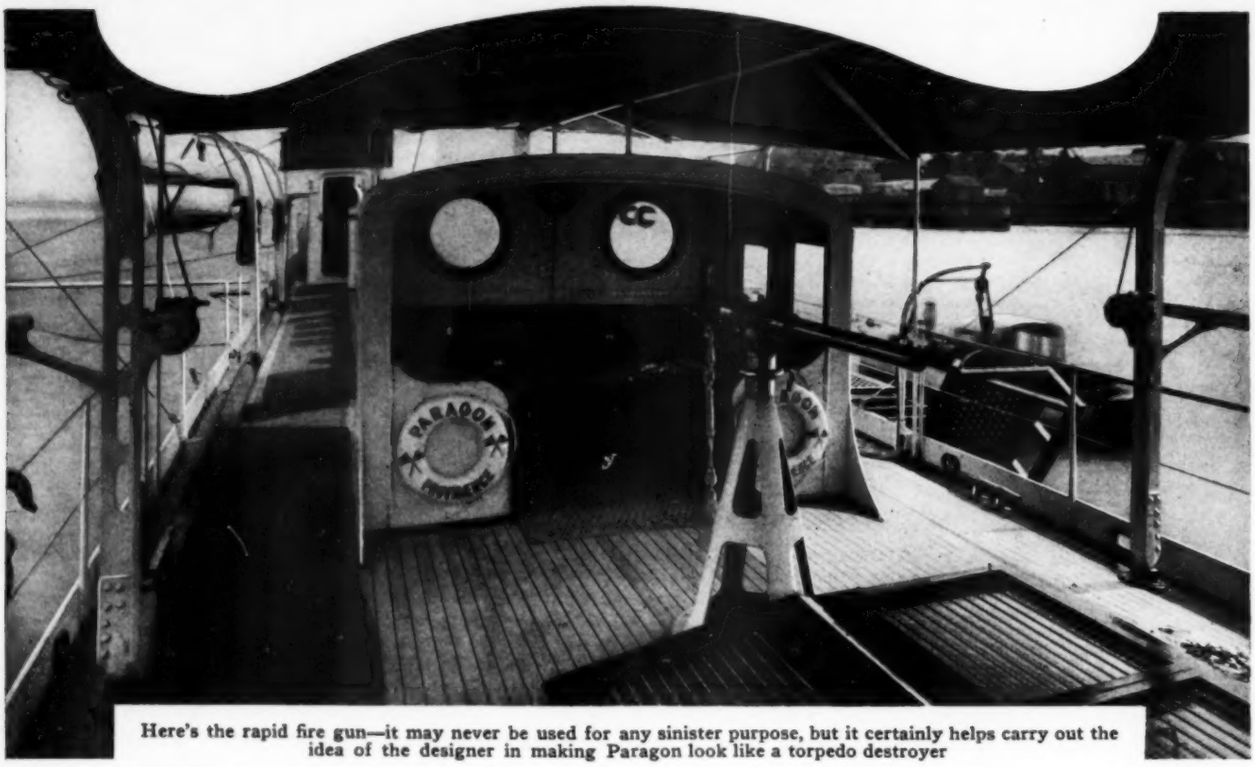
Two six-cylinder Wintons give a speed of 20 miles

The dining saloon and all other compartments are finished in excellent taste

Paragon is a business-like craft, viewed from any angle

Paragon's beam is narrow only proportionately with her length, for there is ample room in all the below-deck compartments. The engine room is amidships, with the crew's quarters and galley forward, and the dining saloon is located in the deck house just aft of the raised deck. This room, shown in one of the accompanying illustrations, is finished in mahogany, with the furnishings in excellent taste, and makes a delightful compartment for use when the state of weather is unpleasant.

There is ample deck-room, however, and protection from the elements is provided by an awning covering the after deck, and by an attractive wind shelter aft of the second funnel. This shelter, by the way, is so shaped that it would not be extraordinary if it were



Here's the rapid fire gun—it may never be used for any sinister purpose, but it certainly helps carry out the idea of the designer in making Paragon look like a torpedo destroyer

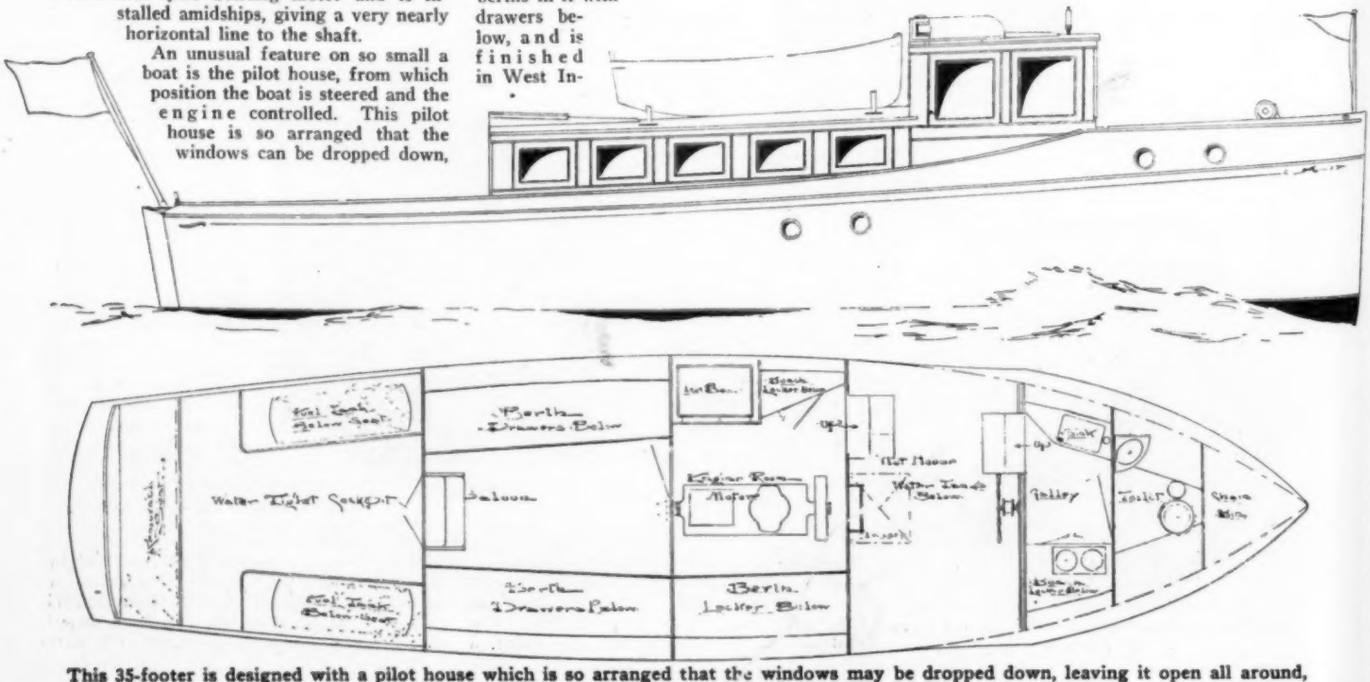
taken by strangers for an armored shield for the operator of the rapid-fire gun, which is visible just aft of it. Davits for four small boats are provided, motor tenders being included in this equipment as well as rowing dinghies.

Paragon, owned by Charles J. Davol, of Providence, R. I., was designed by Swasey, Raymond & Page, and was built last spring at City Island by Robert Jacob. Her greatest length is 120 feet by a beam of 14 feet 4 inches and a draft of 4 feet 6 inches.

V-Bottom Cruiser for Bermuda

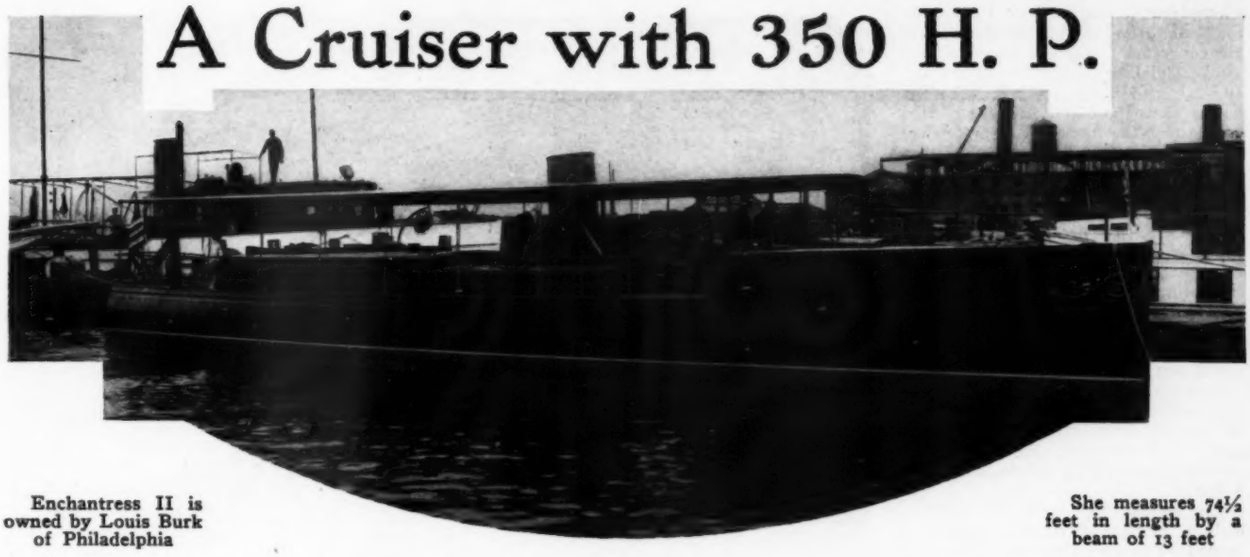
A THIRTY-FIVE foot V-bottom cruiser has recently been built by H. C. Masters of Hamilton, Bermuda, from plans furnished by J. Murray Watts of Philadelphia, Pa. Mr. Masters, who is one of the greatest motor boat enthusiasts in Bermuda, built this boat along lines suitable for the peculiar local conditions. To get the type of hull that would be seaworthy in rough water along the reefs and yet would be of sufficiently shallow draft to go in and out the shoal channels, he decided to use the V-bottom type and this has proved to be very satisfactory. The engine equipment consists of a 5½ by 7-inch four-cycle Sterling motor and is installed amidships, giving a very nearly horizontal line to the shaft.

An unusual feature on so small a boat is the pilot house, from which position the boat is steered and the engine controlled. This pilot house is so arranged that the windows can be dropped down, leaving it open all around and giving the effect in good weather of a bridge deck with a permanent awning over it. The arrangement shows a large self-bailing cockpit aft, with the fuel tanks located under the side seats. This makes an ideal installation for safety, for should any gasoline leak in filling the tanks it would merely flow overboard through the scuppers, and should any leak develop in the piping to the engine the flow of gasoline can be shut off at the tanks. On account of the hot climate, large windows are fitted in the deck house, giving splendid ventilation to the saloon and engine-room. The saloon has two berths in it with drawers below, and is finished in West Indian mahogany. The engine-room has a berth on the starboard side for the engineer and there is plenty of room all around the Sterling motor and the electric light plant. The pilot house, which is also used as a dining room, has steps leading down into the galley. The exterior finish of the cabin and pilot house is in paneled mahogany and the topsides are finished in white enamel, which makes a good-looking contrast. A small motor tender with a 1 h.p. engine is carried on top of the cabin and can easily be swung overboard by a pair of light davits.



This 35-footer is designed with a pilot house which is so arranged that the windows may be dropped down, leaving it open all around, but with permanent covering overhead

A Cruiser with 350 H. P.



Enchantress II is owned by Louis Burk of Philadelphia

She measures 74½ feet in length by a beam of 13 feet

Enchantress II, a New 75-Foot Day Boat, Which is Powered with Two Six-Cylinder Motors and Maintains a Speed in Excess of 20 M.P.H.—Double Planking of Mahogany and Spruce

ENCHANTRESS II is the new express day boat built for Louis Burk, of Philadelphia. Last season Mr. Burk had Enchantress I built and after one season's use made up his mind that she was too small for his requirements, so he determined to build one that he thought would more nearly meet his needs, and decided that a fast day boat was of more practical service than a slow cruising boat. With this thought in view, he commissioned Bowes & Mower, the designers of the first Enchantress, to design such a boat.

Enchantress II is the result of these plans and after a season's trial she has proven to be an exceptionally successful day cruiser, and is probably the largest boat of this type that has been turned out. Her accommodations are entirely for day use, but six people can cruise comfortably in the boat, as six of the transoms are made to extend, so that they will form comfortable berths.

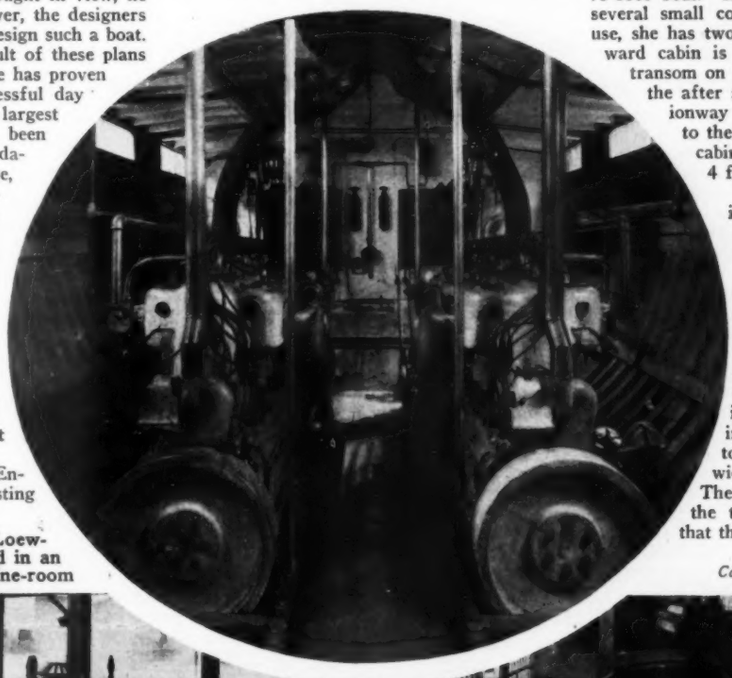
The speed decided on was twenty statute miles per hour. The motors selected were two six-cylinder, 7.6 x 8.5 Harbeck-Loew-Victor engines of the semi-steel crankcase type, developing 175 h.p. apiece at 800 r.p.m.

The construction of Enchantress II is rather interesting for a boat of her size. She is double-planked, with the outer planking of mahogany and the inner of Washington spruce in single lengths. Both courses of planking are run fore and aft and laid in white lead. There is no linen or drill between the two thicknesses. The sister keelsons run from over the struts to within fifteen feet of the bow. These keelsons with the heavy keel and hogging stringers make a very rigid construction. The boat is divided into five watertight compartments by four double bulkheads. Her fastenings are bronze and copper throughout. Her planking is copper-riveted to the frames with a row of copper rivets between each two frames instead of the usual round head screws and washers.

The arrangement is rather unusual for a 75-foot boat. Instead of being divided into several small compartments for the owner's use, she has two large day cabins. The forward cabin is 10 feet 6 inches long, with transom on each side and large locker on the after starboard side. The companionway from this cabin leads directly to the bridge, while forward of the cabin there is a roomy toiletroom 4 feet 3 inches long.

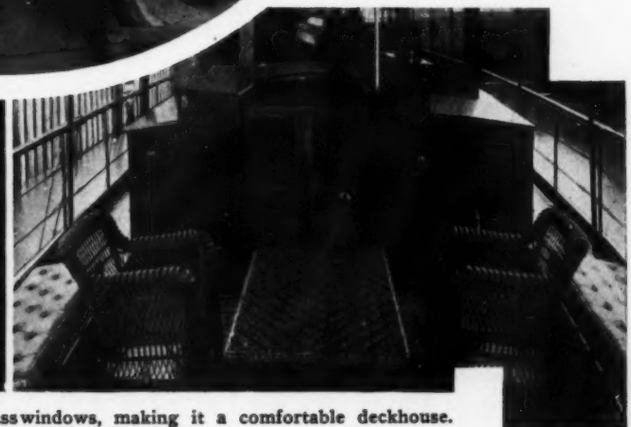
The bridge is 8 feet long and is protected by glass windows on three sides, making a fine deck house in bad weather. Under the bridge are located two gasoline tanks of 150 gallons' capacity each and the crew's quarters.

The engine-room is located aft of the bridge under a low trunk house and is 12 feet 6 inches long with 6 feet 9 inches headroom. The hatch to the engine-room is the full width of the engine-room trunk. There is a large hatch frame in the top of this compartment, so that the motors can be removed for



Two 175 h.p. Harbeck-Loew-Victor motors are installed in an exceptionally roomy engine-room

Copyright by J. N. Pearce



The bridge is protected on three sides by glass windows, making it a comfortable deckhouse. The after cockpit is 9 feet long

winter overhauling without ripping up the house or deck. Suction blower fans are connected to the crankcase and the smoke and burnt gases are sucked out and exhausted through the funnel. The hausts from the motor are also carried out through the funnel. A separate electrically driven air and bilge pump has been provided at the after end of the engine-room. The pump is so connected that it can be used to pump out the bilge, wash decks, for fire and to circulate water around the jackets of the motors in case of breakdown of the regular circulating pumps or to cool the motors off after they have been stopped.

Aft of the engine-room is the galley, which is 5 feet 6 inches fore and aft and 8 feet wide. The after cabin is 16 feet long and the full width of the boat. One athwartship berth is placed under the companion steps and two extension berths are on each side. The after cockpit is 9 feet long and the after deck 4 feet.

The awning top is semi-permanent with a mahogany plate or coaming around the awning stanchions. Forward of the after campanionway another windshield has been placed to protect the after cockpit.

Enchantress, which was built by the Mathis Yacht Building Co., of Camden, N. J., measures 74½ feet in overall length by a beam of 13 feet and a draft of 3 feet 7 inches.

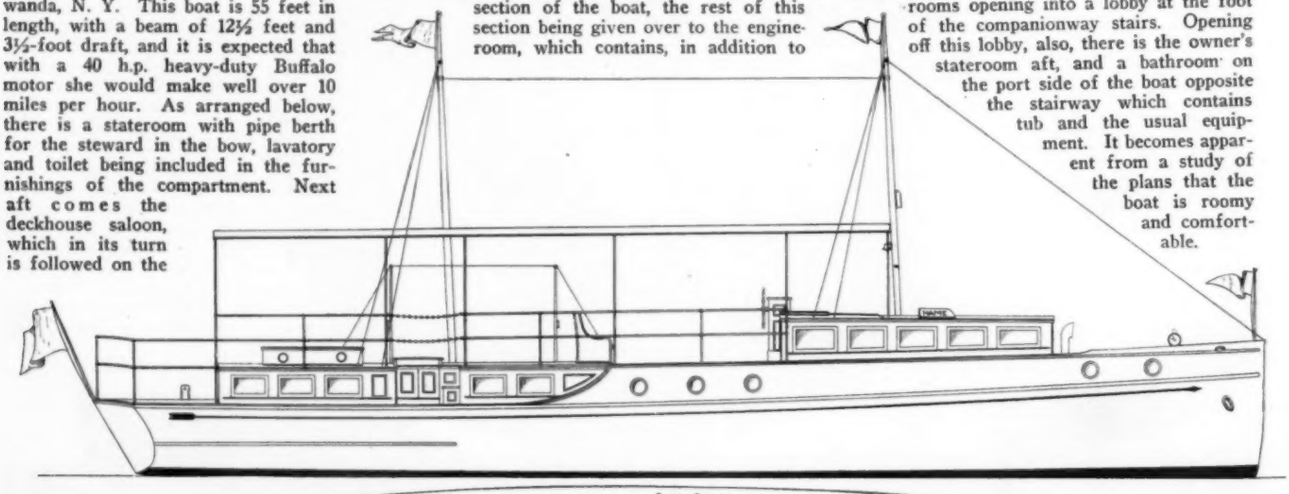
Although built as a day cruiser, Enchantress has sleeping accommodations for six, while the galley is unusually large and well equipped

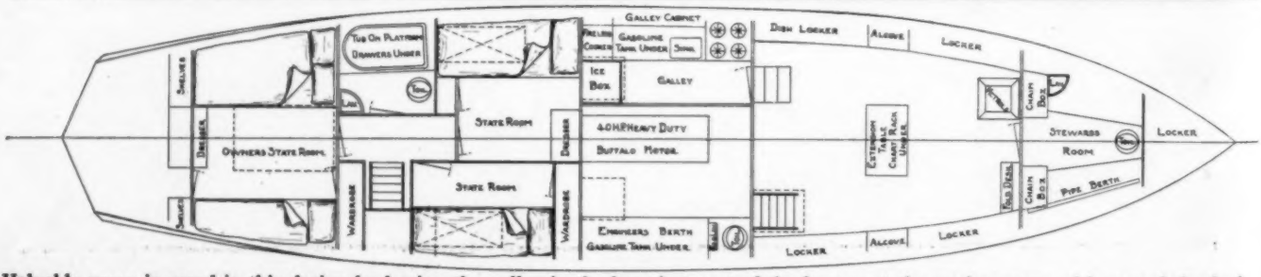
A Well-Arranged 55-Footer

Of the Semi-Houseboat Type with Large Cabins and Roomy Decks Laid Flat—Owner's Living Quarters Aft with Saloon Forward Having Galley and Steward's Room Adjoining

A SEMI-HOUSEBOAT cruiser with large and full cabins and with the decks flat enough to walk on has been worked out by G. R. Richardson, of North Tonawanda, N. Y. This boat is 55 feet in length, with a beam of 12½ feet and 3½-foot draft, and it is expected that with a 40 h.p. heavy-duty Buffalo motor she would make well over 10 miles per hour. As arranged below, there is a stateroom with pipe berth for the steward in the bow, lavatory and toilet being included in the furnishings of the compartment. Next aft comes the deckhouse saloon, which in its turn is followed on the port side by a well-equipped galley. Needless to say, the galley and steward's room communicate directly with the saloon. The galley, however, occupies only part of the midship section of the boat, the rest of this section being given over to the engine-room, which contains, in addition to the power plant, a pipe berth for the engineer, and sanitary fittings.

Next aft and separated from the motor compartment by a bulkhead come two guests' staterooms opening into a lobby at the foot of the companionway stairs. Opening off this lobby, also, there is the owner's stateroom aft, and a bathroom on the port side of the boat opposite the stairway which contains tub and the usual equipment. It becomes apparent from a study of the plans that the boat is roomy and comfortable.





Valuable space is saved in this design by having the galley in the beamiest part of the boat next the engine-room, with one of the fuel tanks under the galley cabinet

PRIZE CONTEST in QUESTIONS & ANSWERS

Open or Solid Deadwood?

The Advantages and Disadvantages of Open Deadwood on a Cruising Boat Discussed by MoToR BoatinG Readers--Declared Inseparable from Certain Kinds of Craft

THE PRIZE CONTEST—Answers to the First Question in the September Issue

Depends on the Type of Boat

(The Prize-Winning Answer)

THE question is so broad, no data being given as to the size of the cruiser in question, or to what localities she is to be used in, and what months of the year she will be in commission, that it would seem advisable to classify cruisers as to size for their general utility so as to cover the ground in its entirety. For convenience I shall divide them as follows:

Class A—25 feet to 40 feet O. A.
Class B—40 feet to 75 feet O. A.
Class C—75 feet and upwards.
Class D—All twin screw cruisers.
Class E—All racing cruisers.

Assuming that Class A is a one-man boat and kept in commission the year round, either on the coast, great lakes, or on inland waterways, the advantages of deadwood should not be underestimated as a safety valve for seaweed, grass, driftwood and ice in northern latitudes, and grounding on inland waterways as well as in southern latitudes.

In Class B the deadwood is not so essential, as there are generally three men in the crew, who should be able to straighten a bent shaft or replace a broken strut and meet any emergency that might arise. This class of cruiser is longer, beamier, deeper and heavier, so less likely to suffer from the dangers of ice and driftwood, yet she is liable to encounter the same troubles as her smaller sister.

The larger, or Class C, cruiser, which of necessity must be of deeper draft for offshore work and coastwise cruising in all seasons, should have deadwood to insure stability and seaworthiness, as must that in Class D. Deadwood in any cruiser means less rolling and easier steering when running, or with a beam sea.

As for the racing Class E, a most valuable adjunct, which has developed the gasoline engine and all stepped boats designed for speed only, this is the evolution of the demands of the speed bug and is built primarily for smooth water, although many of them have proved to be fairly seaworthy in a summer sea. Of necessity from the naval architect's point of view, boats of this style must be without deadwood, so as to give plenty of free water for the propeller or propellers to revolve in, permitting the speed called for.

In grounding and hauling out there is no comparison between the advantages of having deadwood and being without it, for when aground in shallow water on a muddy or sandy bottom there is no chance of injury to the propeller shaft, which also holds good for painting and laying up, if the cruiser is not kept in commission the year round.

Many owners of small cruisers do not go to shipyards to repair a small leak or to paint their bottoms, but beach them at high tide and paint and repair on the ebb. Were there no deadwood in the smaller cruisers this would be an impossibility to the majority of owners, who as a rule could not meet such a situation and would have to repair to a shipyard in a busy season, wait their turn and lose valuable time, to say nothing of the expense.

EUGENE LENTILHON, Bayshore, L. I.

Questions for the January Issue

1. A person knowing absolutely nothing about boats or boating purchases his first motor boat and wishes to learn the game from the bottom up. What advice or instructions would you give such a person that would help him.

Suggested by A. A., Hannibal, Mo.

2. Briefly describe and illustrate some changes you are making on your boat or her equipment while she is out of commission this winter which past experience has shown are advisable.

Suggested by Q. E. D., Cleveland, O.

3. Explain and illustrate the fitting, supporting and fastening of the coaming on an open motor boat.

Suggested by W. B. M., Newburgh, N. Y.

RULES FOR THE CONTEST

Answer to these questions, addressed to the Editor of MoToR BoatinG, 119 West 40th St., New York, must be (*a*) in our hands on or before November 25. (*b*) about 500 words long, (*c*) written on one side of the paper only, (*d*) accompanied by the senders' names and addresses. (The name will be withheld and initials or a pseudonym used if this is desired.) Questions for the next contest should reach us on or before the 25th of November.

The prizes are: For each of the best *answers* to the questions above *any article* advertised in the *current* issue of MoToR BoatinG, of which the advertised price does not exceed $25, or a credit of $25 on *any article* advertised in the *current issue* of MoToR BoatinG, which sells for more than that amount. (*There are three prizes—one for each question—and a contestant need send in an answer to but one if he does not care to answer all three.*)

For each of the questions selected for use in the next contest, *any article* advertised in *this issue* of MoToR BoatinG, of which the advertised price does not exceed $5, or a credit of $5 on *any article* advertised in *this issue* of MoToR BoatinG which sells for more than that amount.

Solid Deadwood Desirable

FULL, deep deadwood, or open deadwood on cruisers is a problem not easy to decide offhand, for much depends on the type of cruiser, the waters she is to be used upon, etc.

A full, deep deadwood carried aft practically the entire length of the shaft most certainly adds weight. Yet in a heavy cruiser this slight addition could scarcely be considered. Because of it the boat requires a large turning circle, which complicates handling in narrow, crowded waters. For open sea work, where maximum steadiness and stability are required, this type of deadwood assists materially. In a heavy wind and sea it acts somewhat in the manner of a keel or centerboard on a sail boat. A steadier course can be steered when a boat has this full deadwood.

Furthermore, plenty of deadwood, well fastened, adds to the strength of the boat, and does a great deal to reduce sagging and hogging strains. Securely bolted to the keel, it becomes an integral part of the whole structure, and as such lends strength at all times. When hauled out for the winter the weight on the blocks is more evenly distributed. Any construction that tends to minimize these strains surely prolongs the life of the boat.

If by any chance, and it often does happen, the boat is run upon the rocks or a bar, the deadwood is again a protection. It may prevent serious injury to the propeller or rudder, both of which can never be too well guarded. It also affords something substantial for her to rest upon until she can be floated. In the same way protection from floating logs, boxes, barrels, etc., which are nearly always present in most waters, is obtained.

Open deadwood allows a boat to turn and manoeuver much more quickly than the other type. This is a big advantage in a light, high-speed cruiser built for racing purposes; so also is the weight saved in such cases. It allows free passage of solid water to the wheel and somewhat reduces eddy making. Where extreme light draft is desired the deadwood can be reduced to practically nothing, as in tunnel stern boats, or those built expressly for operating in unusually shoal waters. But these boats need internal strengthening not usually adopted in the ordinary cruiser.

It would seem that, on the whole, a good deep, solid deadwood on a real cruiser would be more of an advantage than a detriment.

C. D. DAVIS, Marblehead, Mass.

When you send in your answers you must state what you will take for a prize should you win one

Much to Be Said for and Against

THE main disadvantage of deadwood on a cruiser is the loss in speed, hence we notice that where speed is desired in the cruiser or runabout the skeg and deadwood are cut away or substituted by a skeleton frame or strut.

The loss in speed due to the use of the deadwood seems to be easily compensated for by the advantages in having the deadwood fitted to protect the propeller and the rudder from driftwood or an occasional contact with the river bottom. Still another advantage is the fact that the boat will make a better sea boat and be easily handled in a seaway.

The cause for the reduction in speed with the use of the deadwood is frictional resistance and eddy making and also the loss of solid water at the propeller. The frictional resistance due to these causes in well-formed cruisers will be small, but with the heavy-built cruiser with thick stem and stern post it becomes a considerable item when figuring up the total amount of the ship's resistance.

The usual amount of resistance due to these causes is about 8 per cent. of the total, and, as should be borne in mind, the greater the speed the greater the frictional resistance will be.

It can readily be seen why the omission of the skeg would be to advantage on the speed boat, whereas on the slower going cruiser this frictional resistance would be reduced to a minimum.

The cause of this frictional resistance is due to the stream lines being pushed to one side by the deadwood exerting a pressure on the surface. This may be reduced by having a smooth surface and by carrying the skeg well forward in a low, graceful curve.

It is also possible to reduce eddy making to a minimum by paying careful attention to the skeg and deadwood endings, the best form being a tapered skeg end rather than a square ending. This takes back to the shape of fishes with the rear part tapering off to the tail, giving us the correct idea of the best form with no eddy making at the tail.

In shaping the skeg end to a taper we also obtain a fair stream line to the propeller, which is a great advantage, as it gives the propeller solid water to work in. Having reduced all these resistances to a minimum and taking all things into consideration, the skeg and deadwood on a cruiser are a great advantage. William Renz, Quincy, Mass.

Advantages of Open Deadwood Predominate

THERE is so much to say in favor of the open deadwood that its one disadvantage is readily disposed of—it does not tend to keep a boat on a straight course. On the other hand, it makes a boat more responsive to its rudder and has the great advantage of allowing real water to get to the propeller. There are no mechanical difficulties in the construction of the open deadwood, and if properly built with a substantial strut the propeller shaft is sufficiently supported. In the writer's boat the part of the keel which supports the lower end of the strut is very narrow, but is reinforced with a ½ x 2¾-inch strip of bronze, which gives it absolute rigidity. There is also ample strength through the strut to support the weight of the boat when it is hauled out or beached.

There are certain structural advantages in having a shaft log, but this may be retained with the open deadwood, if the proper construction methods are adapted. In a following sea, a boat without a deadwood will often hold her course much better and steer easier than the cruiser with the deadwood.

E. W. Marshall, N. Y. City.

Stopping Up the Leak in the Tank

Methods of Effecting Temporary and Permanent Repairs with the Materials at Hand—Bolt Patches, Wedged Patches, Solder and Laundry Soap, Etc., Variously Suggested

THE PRIZE CONTEST—Answers to the Second Question in the September Issue

Permanent Repair Without Solder

(The Prize-Winning Answer)

OFTEN a tank which is perfectly sound otherwise will be punctured by accident, or a fitting may pull out. The latter happened to a shaped tank I had; in tightening up a dripping drain cock it came out entirely. It had been soldered to the tank without a bushing, and, as it was impossible to remove the tank without ripping off the deck, I was in somewhat of a fix. The hole, which was large enough to take a ⅛-inch I. P. nipple, was finally patched up as follows: The solder was filed flat to give a washer a bearing surface, then a soft copper wire was pushed through the hole and fished up through the filling hole.

This is the hardest part of the job, but by using soft bell wire, dropping a hook tied to a piece of string through the filling hole to the bottom of the tank, then twisting the wire from side to side, it should be hooked easily enough. Pull up the hook and the soft wire will bend as it comes out the filling hole and can be easily fished out. The next thing is to prepare the patch. Get a short cap screw, a nut to fit it, some iron or brass washers, and some thick asbestos paper. If the screw is very short, some means of holding it while the nut is being screwed on will be necessary; to do this bore a 1-16-inch hole about half an inch deep along the axis and drive in a nail. This nail should be a drive fit in the hole, and by giving it a few light taps after the point reaches the bottom of the hole it will upset and hold tight enough for the nut to be screwed up. Next, tie a short piece of easily broken string or thread about two or three inches long to the screw just under the head, then tie a stronger piece to that, the second piece being long enough to reach from the patch to the filling hole with plenty left over. This is to recover the screw in case anything goes wrong before the patch is completed.

Now put on an asbestos washer, then a metal one, then another asbestos one—here is where the tight fit of the asbestos washers comes in handy as the last one will hold the metal one in place. Now twist the wire over the nail and pour shellac over the washers till they are fairly soaked through and through with it. Now pull on the wire till the screw comes out of the hole to be patched, taking care that the loose end of the safety string does not fall into the tank also, then string on the other washers, after soaking them in shellac, and finally the nut, screwing it up quickly before the shellac has time to set. By holding the nail with a pair of pliers the screw will remain stationary while the nut is being screwed on. Finally, give the string a sharp pull, breaking the thin string, and your patch is complete. Let the shellac set before pouring in any gasoline (a couple of hours will be sufficient), and you will find that the patch

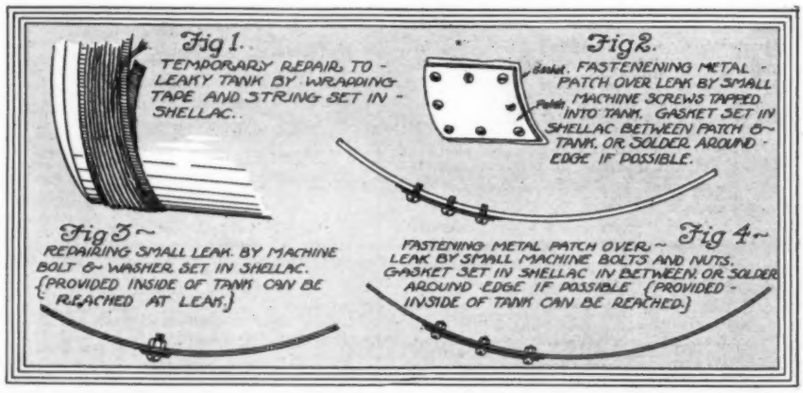
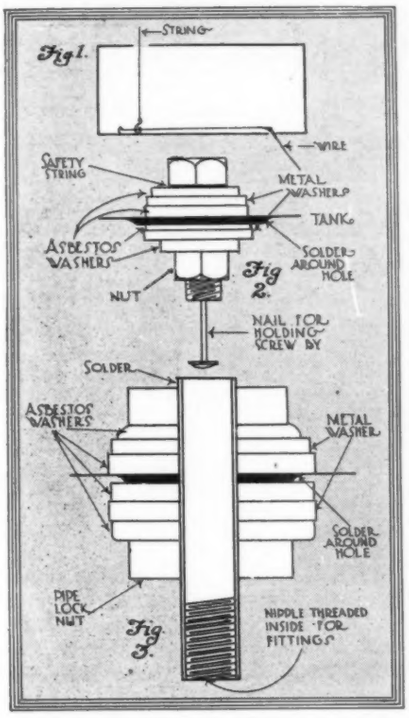


Fig 1.
TEMPORARY REPAIR TO LEAKY TANK BY WRAPPING TAPE AND STRING SET IN SHELLAC.
Fig 2.
Gasket. FASTENENING METAL PATCH OVER LEAK BY SMALL MACHINE SCREWS TAPPED Patch INTO TANK. GASKET SET IN SHELLAC BETWEEN PATCH & TANK, OR SOLDER AROUND EDGE IF POSSIBLE.
Fig 3 ~
REPAIRING SMALL LEAK BY MACHINE BOLT & WASHER SET IN SHELLAC. (PROVIDED INSIDE OF TANK CAN BE REACHED AT LEAK.)
Fig 4 ~
FASTENING METAL PATCH OVER LEAK BY SMALL MACHINE BOLTS AND NUTS. GASKET SET IN SHELLAC IN BETWEEN OR SOLDER AROUND EDGE IF POSSIBLE (PROVIDED INSIDE OF TANK CAN BE REACHED.)

Four different repair jobs are here shown by H. H. Parker, of Oakland, Cal. The figures with accompanying legends are self-explanatory



A. A.'s method of applying a bolt patch, Fig. 3 showing the same idea as applied to a threaded nipple

will be dry when spring key cocks and pipe joints are sweating gasoline.

If you wish to retain the fitting, a similar method will suffice (see Fig. III), substituting a long nipple threaded throughout its length with a locknut soldered on one end, for the cap screw. A small water outlet or similar fitting would be better if it can be obtained of the correct size.

Both the above methods have been tried and have worked out satisfactorily.

A. A., Hartford, Conn.

How to Do a Good Soldering Job

SMALL leaks in the fuel tank, such as sometimes occur around the outlet fittings, pipe connections or in other places, may be temporarily repaired, if the place can be reached, by applying common yellow laundry soap. The hard, white soap will not stick and is of no use. Get the old-fashioned yellow kind. If it is quite new and soft, all the better. Plaster this over the leak or around the joint. Gasoline will not dissolve or affect it.

To repair a leaky tank permanently it should be soldered. This may be done by any one with a few simple tools if directions are followed. There is no necessity for transporting a bulky tank to the tin shop, or paying for a tinner's time while he travels to the boat.

The tools and materials needed are a soldering copper, which may be bought for from twenty-five to fifty cents; some solder, a little muriatic acid and a lump of sal ammoniac; also some means of heating the copper. For this purpose I have found the Primus or similar kerosene stove, such as is often used on boats, to give good results. A gasoline blow torch is also good. If nothing else is available a charcoal fire built in an old pail will do. Punch some holes in the bottom for draught and one in the side to put the copper in. Set the pail with the charcoal fire on a couple of bricks or stones where there is some breeze and you will soon have all the heat needed.

If the tank or surface to be soldered is galvanized the acid may be used "raw." That is, just as you buy it. If not, or if you wish to solder brass, copper or iron, the acid should be "cut." This is done by dissolving zinc in the acid. Sheet zinc cut in strips is convenient. As the acid will only dissolve a certain amount, the exact proportion of acid and zinc is not of importance. Put only a small amount of zinc in the acid at a time or the heat may break the bottle.

The point or working end of soldering copper must be tinned. To do this, file the end up smooth and to a good working shape, then heat to nearly a red heat, and rub the copper on the sal ammoniac and then on the solder and again on the sal ammoniac. Continue until the pointed end is nicely tinned. The tool is now ready to use.

In soldering, the copper should be heated only enough to easily melt the solder. This requires only a black heat if the copper is well tinned. Should it become overheated and the tin burned off, it must be filed up and retinned as before.

Now we have the tools prepared and material needed at hand, we may consider doing the job. Probably the tank contains more or less gasoline. For safety this should be removed. Drain the tank and then leave the filler cap off for a day so the tank can dry out.

Now while ahe copper is heating, the surface to be soldered should be scraped clean, the exact location of the leak having been marked while the gasoline was in the tank. Apply a little of the acid to the surface. Then melt some solder with the copper and hold it on the leak until the solder flows easily and sticks to the surface. With a little practice you will soon be able to do a good job of soldering. The outfit will also be found quite useful from time to time around the boat.

C. H. CHRISTIE, Saginaw, Mich.

Patch Wedged in Place

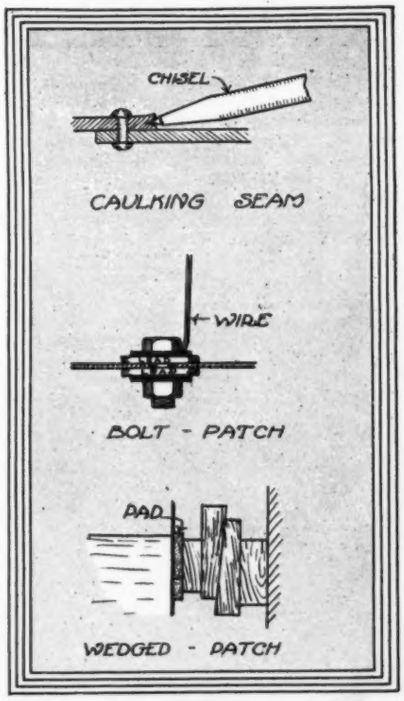
THE wide variety in the shapes of tanks and locations of leaks make it necessary for the motor boatman to use some ingenuity in adapting any method that may be suggested to his individual requirements. For small leaks, a temporary repair can often be made by rubbing soap over the defective seams. If the soap is held in place by rubber tape, or by a canvas pad bound in place by a cord, so much the better. If the tank feeds the gasoline by gravity to the carbureter, an opening can often be cut in the top of the tank, so that access can be obtained to the inside of the tank to facilitate repairs. A small hole in the tank can often be repaired—and the repair will be permanent—by the use of a bolt fitted with lead washers. The bolt can be fastened to the end of a rather stiff wire and inserted through the filler cap of the tank to the puncture, the nut being put on the bolt from the outside.

If the gasoline leaks through a seam in the tank, the seam can often be calked by the use of a cold chisel. The chisel should be sharp and used lightly, or the seam may be opened more than before. The chisel is used to split the edges of the sheet metal and to force the lower edge into tight contact with the other plate.

It may happen that the leak occurs on some part of the tank where a pad can be applied and the pad held in place by means of wedges placed against some adjacent part of the boat. First, a layer of tinfoil should be placed on the leak, after the leak has been smeared with soap. Then the tinfoil should be backed with a layer of leather, or a canvas pad, and the pad should be held in place by a block of wood or by any convenient means. If the tank is cylindrical, the inside of the block should be curved to fit the tank and the block may be held in place by cords passing entirely around the tank.

Iron cement has a number of uses around a motor boat, and if a few ounces are carried in a small can, the cement may be very useful in case of a leak. The iron cement is applied to the leaky seam or joint like putty, and, if the leak is small, no other repair will be needed. If the leak is larger, it may be better to bind the cement in place with tape or to use some other form of bandage. One motor boatman fixed a rather large leak in a tank by covering the hole with a piece of wire gauze, taken from the gasoline filter of the carbureter, and covering the gauze with a layer of iron cement.

MURRAY FAHNESTOCK, Pittsburgh, Pa.



Three different schemes proposed by Mr. Fahnestock

Steering the Boat from the Side

The Question of How Open Craft Can Be Satisfactorily Controlled from a Position Alongside the Motor Calls Forth Several Solutions—Folding Steerer the Prize Winner

THE PRIZE CONTEST—Answers to the Third Question in the September Issue

Combination Steering Gear

(The Prize-Winning Answer)

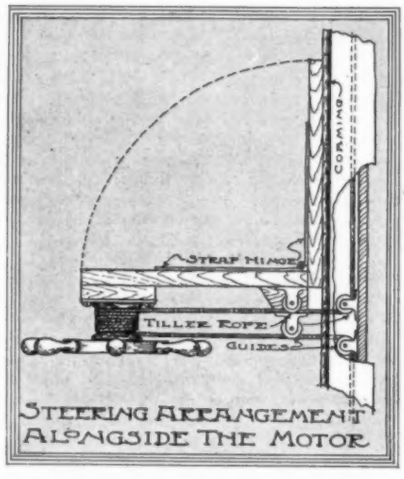
EVEN the automobile owner who may be inclined to be a little more fastidious than the average boat owner about control and convenience, even he finds a certain feeling of satisfaction in having the boat engine out in the open cockpit where it is getatable for adjustment and repair and may be easily kept clean. Moreover there are many who are so prejudiced against the concealment of the power plant that the problem of a steering arrangement alongside the motor is worthy of more than passing thought.

The side steering wheel always appealed to me as a fitting companion for a "one lung" motor which skips in one cylinder. For, though automobiles have been equipped with almost every conceivable sort of steering device, nothing so unnatural as a side steerer was ever attempted to my knowledge.

Of course, the boat's power plant may be out of reach of the steersman if he be in the bow or the stern, and it is not always desirable to carry the controls this distance. Again, the permanent steering wheel located next the engine and facing front, which would be ideal for maximum efficiency with one-man control, would no doubt be in the way except in boats of exceptionally wide beam.

Therefore the problem is to locate a conventional steering wheel next the engine in such a manner that the navigator will face forward and steer in a perfectly natural way, and yet it should be entirely out of his way in case he wishes to wield a boat hook or anchor or make a difficult landing.

All the necessary requirements are embodied in the arrangement of the steering wheel as shown in the illustration. Two pieces of wood the same as that of which the coaming is made and 1⅛ inches thick should be cut to a length of about one-third of the boat's beam and the same width as the coaming measured on the inside. These are hinged together, end to end, with heavy ornamental strap hinges, and one of them is fastened securely, so that the other may swing inward to the point where the steering wheel is to be located. Now fasten the wheel to the after side of the swinging member at its free end. Then lengthen the steering line until it will extend out to the drum of the steerer, make the required number of turns and return to its normal path again. Four wheel tiller line guides will be needed, two to guide the line where it leaves and returns to the old path and two more to prevent chafing when the auxiliary steerer is folded back, as it may be readily seen that the device will serve equally well for a side steerer should one be desired at any time.



The folding steering gear suggested by Mr. Huestis

R. W. Huestis,
Springfield, Mass.

Vertical Lever the Simplest

ABOUT the simplest way to steer a boat from a position alongside the engine is to use a long vertical lever pivoted at its lower end near the floor of the boat, a handle at its upper end and the steering line attached just below the handle, the boat being steered by merely moving the lever back and forth. But this type requires considerable room to operate and often the lever cannot be given sufficient play to allow the rudder to be put hard over.

A very simple and satisfactory arrangement is the two-handle steerer, used either with a drum or rack and pinion and attached to the same steering line as the regular forward steerer. The drum type is the cheapest, while the rack and pinion steerer takes up slightly less room. These steerers are also made with only one handle, but the double handle will be found much more convenient.

This is better than the regular type of spoked or round rim steerer, because one can reach out while working over the engine, grasp a handle and quickly turn the rudder all the way over, if necessary.

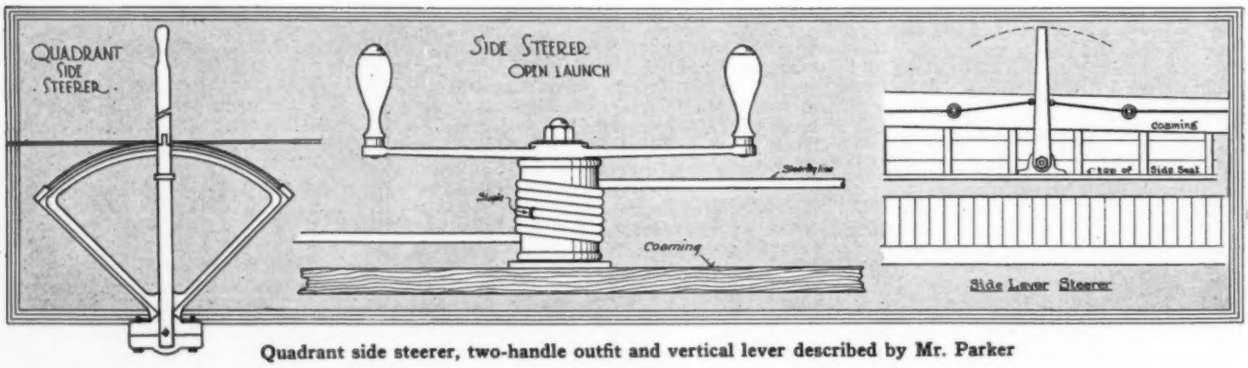
The best place to attach the side steerer is on the inside of the coaming alongside the engine—one style is made in which the drum projects outside the coaming, thus saving space inside the cockpit.

H. H. Parker, Oakland, Cal.

Improvised Bulkhead Control

TO be able to steer from a position near the motor in an open boat is almost a necessity where one man is obliged to handle the wheel and operate the engine both. The accompanying drawing shows two methods, one which includes the operation of a forward steering wheel and the other a rear steerer only.

A wood partition or "semi-bulkhead" (if I may call it such) affords many advantages be-



Quadrant side steerer, two-handle outfit and vertical lever described by Mr. Parker

sides that of bringing the rear steerer directly in front of the operator. Of course the wheel could be placed on the side of the coaming, but if all the steering is to be done in that position, it would be more or less tiresome The partition shown extends almost over to the engine and is placed at a comfortable distance from the rear or other seat provided for the steersman. This partition will also serve as a convenient and safe place to attach the air gauge, voltmeter, switches, frequently used wrenches, fire extinguisher, etc., inasmuch as it is in continual sight of the operator.

An automobile type wheel with a wood rim is more suitable for this part of the boat than the ordinary wheel with handles on the rim. Great care should be taken to make the partition and the whole steering apparatus strong and rigid. This part of a boat's equipment is at times subjected to great strain, and should something give away at the critical moment, it cannot be said to what extent the resulting damage would amount.

The system employing two wheels shows a line extending around the cockpit, underneath the coaming, with a quadrant under the after deck. Tiller line blocks of good size should be used at sharp turns and large screw eyes in between where the line is more or less straight. Swivel blocks are suitable where the line turns upward, adjacent to the steering wheels.

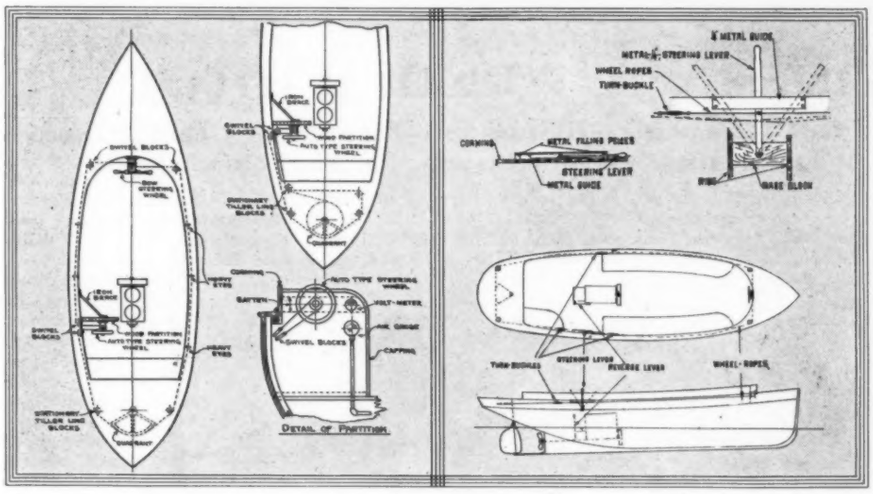
The other arrangement employing a rear steerer only operates upon the same principle, but both lines are led under the after deck instead of using a quadrant, as indicated by the dot-and-dash lines, and the two blocks on the starboard side may be eliminated and the system thus made to operate more easily.

Always have the starboard cable of the steering line wrapped around the drum of the steering wheel from the top. This will make the boat answer its helm in the direction in which the wheel was turned, which is the method used on most large vessels.

HARRY A. MOTZ, Philadelphia, Pa.

Full-Control Outfit

IN all open boats where the position of the motor will allow it the steering wheel should be located alongside the power plant, thereby making the craft easier to handle in tight places.

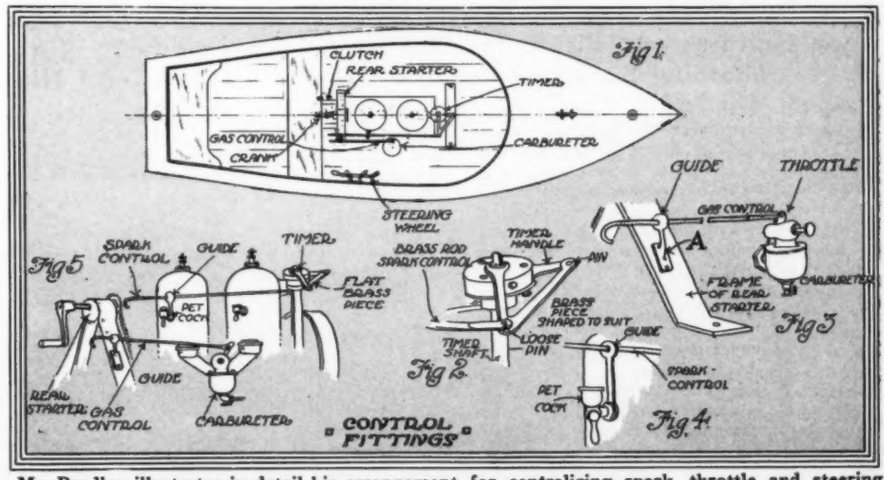


Various details of bulkhead controls devised for open boats by Mr. Motz and Mr. Higgins

The accompanying illustrations show a neat arrangement of control recently installed in a small open runabout where the steering was done from alongside the motor. The boat in question is of the V-bottom type, somewhat under eighteen feet in length, fitted with an ordinary inboard rudder and equipped with a light-weight two-cylinder motor, reverse gear, rear starter, and side steering wheel, which are relatively located about as shown in Fig. I.

After installing the power plant, etc., a controlling device for spark and throttle within easy reach of the operator was seen to be an assured requirement. With this fact in mind the simple arrangement here shown was worked out and installed. First a piece of sheet brass was sawed and filed to the shape as shown in Fig. II. and fastened to the timer in the manner illustrated. Two small brass fixtures as in A, Fig. III, originally intended for holding curtain rods, were provided, and the flanged part of one of these was cut off, the stem hammered out flat and drilled so as to allow the threaded portion of the petcock of the rear cylinder to easily pass through the hole. The guide was then fastened to the cylinder casting by screwing in the petcock, as shown in Fig. IV. A short length of brass rod was then inserted through the guide and attached to the brass piece fastened to the timer, thus completing the spark control. The other curtain fixtures to be used as a guide were fastened to the frame of the rear starter. A brass control rod was inserted through the hole and attached to the throttle, as in Fig. III, thus completing the gas control. The control assembly, complete and attached to the motor, is shown in Fig. V.

C. E. BRADLEY, Fall River, Mass.



Mr. Bradley illustrates in detail his arrangement for centralizing spark, throttle and steering control

Has Given Perfect Satisfaction

THE lever shown in the accompanying sketch is one that the writer has rigged on two boats and found to work very satisfactorily.

It is composed of a metal guide and a metal lever. The turnbuckles are optional, though they are put in to take up the slack in the wheel ropes, and two are all that are required. Three are shown on the sketch, as those are the three best positions for good results. The lever is made of either brass or galvanized iron, at least 3-16-inch thick (¼-inch is better), and at least 1¼ inches wide, and of sufficient length to clear the coaming and to give good leverage. The leverage can easily be found by making the lever's radius—that is, its radius from its lower end to where the wheel ropes are fastened to it—equal to, and slightly greater than the radius of the tiller or quadrant. It should be fastened to a

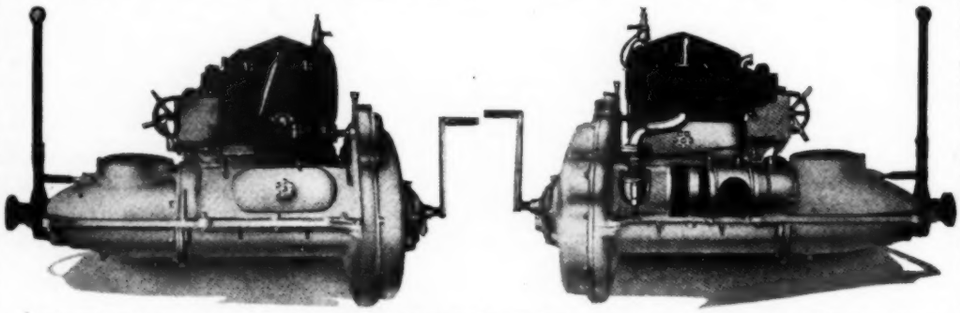
(*Continued on page* 50)

The Scripps "Dream Motor"

A Popular Model Made in Two, Four and Six Cylinders with Every Moving Part Enclosed—Single-Unit 24-Volt Lighting and Starting System, Regular Equipment

SINCE announcing its Series B "Dream Motor," the Scripps Motor Co., of Detroit, Mich., has had flattering success with this all-enclosed conception. As the cylinders of this engine are cast in blocks of two it naturally follows that the models in this line are of two, four and six cylinders. The two-cylinder machine is shown in the accompanying illustrations this motor being rated to develop 15 h. p. at 900 r. p. m.

Special stress is laid by the manufacturer on the outward appearance of these Series B engines—the enclosed flywheel, the clean cylinder sides and head and the tapering rverse gear. And, it is stated, the cleanness of the appearance is no greater than the motor's cleanness of operation, all moving parts being enclosed with the possibility of flying oil eliminated. Instead of detracting from the accessibility of the motor the flywheel housing is said to add to it, as in the housing are concealed the helical cut gears which operate the camshaft, water pump and magneto. The removal of the flywheel housing places within easy reach all of these vital parts. Not only are the flywheel, valves and valve rods enclosed, but the ignition wires are covered up with the exception of a short three-inch length at the spark plugs. Accessibility is taken care of here again, as the wires may be gotten at by the removal of a plate.



Starboard and port views of the two-cylinder Series B Scripps motor. This motor with aluminum crankcase weighs 500 pounds, and delivers 15 h.p. at 900 revolutions per minute

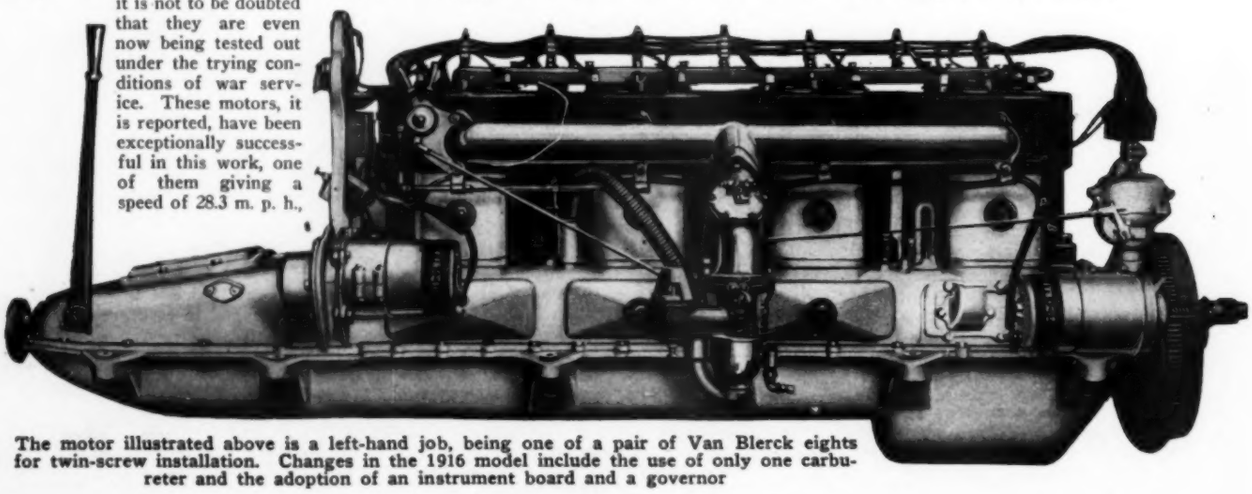
In addition to a 24-volt single unit starting and lighting system these motors are equipped with spent-gas pumps for filling the air tank, spark and throttle control set within easy reach of the operator, and integral reverse gear.

The Van Blerck Eight for 1916

New Features of This Motor Include an Abandonment of the Two-Carbureter Principle, Affording Simplified Control, and the Adoption of a Highly Efficient Governor

ON the heels of the announcement of a new instrument board for the eight-cylinder Van Blerck motor, manufactured by the Van Blerck Motor Co., of Monroe, Mich., comes the introduction of the 1916 motor of this type with several important changes over its predecessors. Already nearly a hundred motors of this type have been shipped to various warring governments, and it is not to be doubted that they are even now being tested out under the trying conditions of war service. These motors, it is reported, have been exceptionally successful in this work, one of them giving a speed of 28.3 m. p. h., or over 2 m. p. h. greater than the builder of a certain boat had guaranteed for it. With later boats of the same model, this builder is declared to have obtained over 30 miles, and the boats are over 60 feet in length at that.

Another change in the new Van Blerck is the dropping of one of the carbureters and the redesign of the intake manifold for one such instrument; this change makes for added simplicity in the control and adjustment of the entire power plant. A governor which is stated to be the nearest approach to a steam governor in its efficiency is regular equipment of the new motor. The ignition equipment consists of a Berling eight-cylinder two-spark, independent magneto with an Atwater Kent distributing system for starting.



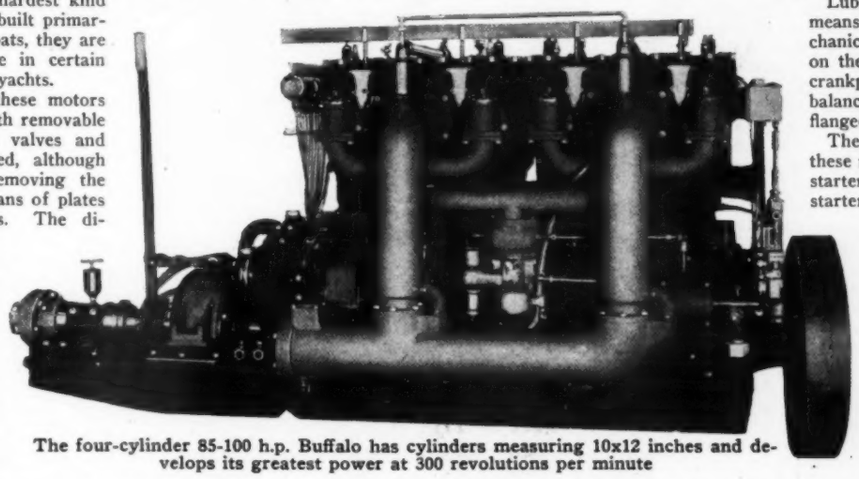
The motor illustrated above is a left-hand job, being one of a pair of Van Blerck eights for twin-screw installation. Changes in the 1916 model include the use of only one carbureter and the adoption of an instrument board and a governor

Two Heavy-Duty Buffalos

Powerful Four and Six Cylinder Machines Built Primarily for Commercial Boats, But Adapted Also for Use in Certain Types of Motor Yachts—Ruggedness and Durability, Features

FOR your powerful, slowly turning motor, strength and endurance are prime considerations, and in building its 85-100 h. p. and 125-150 h. p. heavy-duty motors, the Buffalo Gasoline Engine Co., of Buffalo, N. Y., always has had these points in mind, with the result that these two models in four and six cylinders are massive machines capable of withstanding the hardest kind of usage. Although built primarily for commercial boats, they are adapted also for use in certain types of large motor yachts.

The cylinders of these motors are of the L type, with removable heads and with the valves and valve springs enclosed, although accessible without removing the cylinder heads by means of plates and inspection plugs. The dimensions of the cylinders are 10-inch bore by 12-inch stroke, and the crankshaft turns normally at 300 r. p. m., with 100 revolutions as the minimum operating speed. The valves are constructed of a carbon steel stem cast and fused into a gray iron head. The operation of the valves is carried on by means of hardened and ground steel cams keyed and taper-pinned to the camshaft and operating in conjunction with the Buffalo type of rocker arm. The valve timing gears are of the steel helical type with the intermediate gear adjustable for wear.



The four-cylinder 85-100 h.p. Buffalo has cylinders measuring 10x12 inches and develops its greatest power at 300 revolutions per minute

The crankshaft and connecting rods are hammer forged, the lower bearing of the connecting rods being of bronze lined with babbitt and bolted to the rod. The upper end is also an adjustable bronze bearing bolted to the rod. The piston pins are of steel, hardened and ground, and held in place in the piston by means of a set-screw and lock ring passing around the end.

The lower half of the base which contains the crankshaft and bearings is of cast steel. The reverse gear, which is of the multiple-disc type, is carried on angle irons and is enclosed on the under side by a brass oil pan. The crankcase is made up of cast steel sections and is provided with large panels for inspection and adjustment purposes.

Lubrication is effected by means of a forced feed mechanical oiler and ring oilers on the connecting rods and crankpins. The flywheel is balanced and bolted to the flanged crankshaft.

The regular equipment of these motors includes an air starter, an emergency lever starter, enclosed horizontal governor acting upon a balanced double-disc type throttle, bronze plunger pump for returning excess oil to the lubricator, bronze plunger water pump, plunger air pump and bronze plunger bilge pump. In the four-cylinder model shown in the accompanying illustration the mechanical lubricator is of the nineteen-feed type, there being twenty-seven feeds in the six-cylinder machine. Make-and-break ignition is regularly furnished.

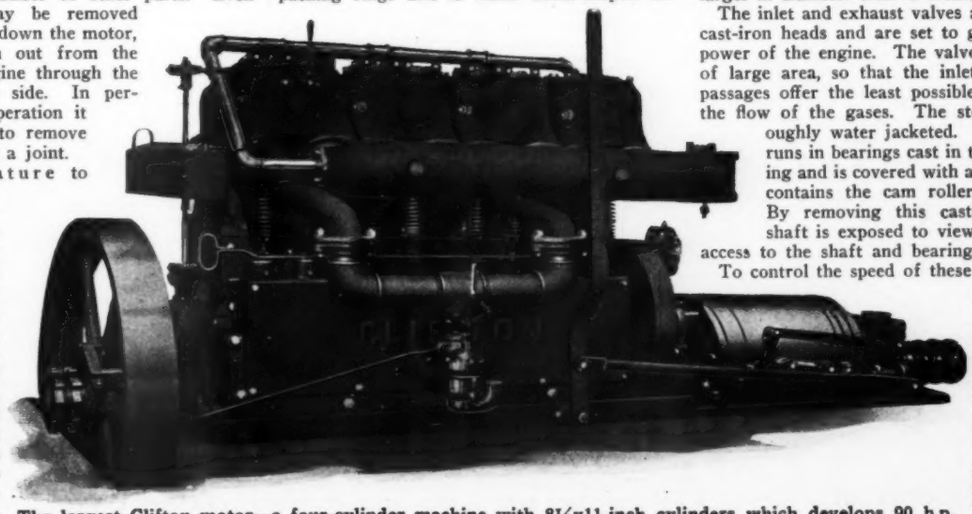
The Clifton Line

Four-Cycle Motors with Several Distinctions, Including Offset Cylinders, Dome-Shaped Pistons, and a General Accessibility Which Permits Extremely Easy Removal of All Parts

CLIFTON marine engines, built by the Clifton Motor Works, of Cincinnati, O., are made in a number of sizes from 14 h. p. to 90 h. p.; all of them have certain distinctive features in common. Of these, the accessible construction is stated to be the most commendable, the motors being so put together that valves, valve lifters, cams, camshafts, etc., may be removed without having to take down a number of other parts. Even the pistons may be removed without tearing down the motor, by taking them out from the base of the engine through the opening in the side. In performing this operation it is unnecessary to remove a pipe or break a joint.

Another feature to which the manufacturer directs particular attention is the arrangement of the cylinders with relation to the crankshaft. Instead of being directly above the shaft, the cylinders are offset slightly in the direction of rotation, the effect of this arrangement being to increase the length of the stroke, and also, it is stated, to decrease side thrust and increase the power of the motor. Reduced wear and consequent longer life for the engine are also claimed as advantages of offset cylinders.

The cylinders are of L-head design, cast singly without separate heads and with extra large water jackets. Each piston has four packing rings and is made dome-shaped on top to allow of expansion when hot. The connecting rod is a steel forging, with the upper end bushed with special bearing bronze. The lower end is a bronze casting, split and bolted on to the connecting rod by two special steel bolts. The crankshaft is of open hearth forged steel, worked out of the solid billet and carefully annealed. The bearings are extra long and large, while the shaft itself is larger in diameter than is usually furnished.



The largest Clifton motor—a four-cylinder machine with 8½x11-inch cylinders which develops 90 h.p. at 500 revolutions per minute

The inlet and exhaust valves are made with cast-iron heads and are set to give maximum power of the engine. The valve openings are of large area, so that the inlet and exhaust passages offer the least possible resistance to the flow of the gases. The stems are thoroughly water jacketed. The camshaft runs in bearings cast in the main housing and is covered with a casting which contains the cam rollers and guides. By removing this casting the camshaft is exposed to view, giving ready access to the shaft and bearings.

To control the speed of these engines when the clutch is thrown out, a centrifugal governor is contained in the flywheel. This governor operates a valve on the intake pipe, and prevents the engine from racing.

RACING STUNTS and NOVEL HANDICAPS

WE inaugurated this department last month in the effort to accumulate a "library" of stunt races for the benefit of race committees who find themselves hard put to it to work out novelty events for their regatta days. As we stated before, the interest in motor boat racing has diminished within the past two or three years, partly because owners are loath to give up the time and money required to get their boats into condition, but largely because it has seemed impossible to evolve any system of handicapping which will be just as fair for one boat as for another. Class racing does much to eradicate this difficulty, but two boats in one class can still be so widely divergent as to speed and rating as to suggest the comparison of racing a horse against an ox—both excellent draft animals, but somewhat different as to speed and general build. Now, with the intent to make the club day a success, a man may enter his boat in one event when he knows that he is beaten at the starting line, and he may take part in another event in which his chances are just as slim because he doesn't mind being imposed upon, but there comes a time when no amount of persuasion will induce him to enter a race just to bring the starters up to the number requisite for the award of a cup to the winner. This natural distaste for playing the rôle of sacrificial lamb is what is turning regatta committees' hair gray.

Method adopted by one regatta committee for starting the boats on their handicaps. Each boat is numbered and a corresponding number is displayed from the judges' boat 30 seconds before the boat's starting time. At the starting time the number is lowered and a gun fired

With this situation in mind—and it should be remembered that in mentioning a diminution in racing, we do not refer to contests between boats of the racing type, interest in which is unflagging—we offered last month four events of different character in any of which the fastest or the slowest boat, the highest or lowest in rating might have won. One of them was a mooring hunt, in which the various contestants were designated by number and were then sent out after the committee boat to pick up that board dropped by the latter boat whose painted numerals corresponded to the number of each boat. As the conditions specified that all of the boards be thrown out at once, and as it was further stated that the rules of the road must be observed, such an event as this would be sure to provide not only excitement, but the opportunity for the display of considerable navigating skill.

Various clubs and regatta committees, as well as individuals, have worked out methods and schemes for handicapping and for stunt races and we want to bring out these novelties in this department. So we here invite every motor boatman who is interested in the sport to send us his ideas and views on the subject. We shall pay at least $5 for every contribution which we print in MoToR BoatinG.

—The Editor.

Improved Bang and Come Back Race

Open to all boats in the club, irrespective of size and horsepower.

Preparatory signal is fired five minutes before the designated start of the race.

The start will be a horse race start, the committee recalling the boats by gun fire until, in their opinion, they come to the line (between the committee boat and the club float) well bunched.

The course will be triangular, three miles in length.

During the course of the race no less than two nor more than five day-light bombs will be fired, and at the firing of the first bomb the competing boats will turn to starboard and proceed in the reverse direction, retracing the course in this manner as often as the bombs are fired.

Each contestant will be expected to maintain his maximum speed from start to finish of the race and should observe the rules of the road at all times.

The finish of the race may be at one of three imaginary lines—from the committee boat to the club float or from the committee boat to either one of two buoys placed 100 yards north and south of the float. This arrangement will have the effect of eliminating jockeying, as only the committee will know which of the three possible finish lines has been selected as the actual finish. The finish will be announced by a gun and several blasts of the committee boat whistle. The first boat to cross the chosen finish line will be declared the winner.

Miniature Cruiser Race

This novelty race is one in which a premium is placed upon other qualifications than speed, the purpose being to introduce into a short race as many of the elements which make up cruising as is possible. The course is short enough to minimize any disparity in speed of the competing boats, and the winner may very easily be a slow boat whose crew is well versed in the details of boat management.

Before the start all competing boats are anchored up the course 500 yards from the club pier in a straight line between two buoys.

The start is from the landing float, in the competing boats' dinghies, the crew of each entrant being assembled on the float ready to pile aboard and row out to the parent boat at the starting gun. Arrived at their boats, the competitors will up anchor, take their tenders in tow and proceed around a three-mile triangular course, in the direction which will take them past the club float in the first stretch of the course.

On coming around to the imaginary line between the two buoys on which the boats were anchored each boat will come to a stop and *without anchoring* despatch one member of the crew to the club landing in the dinghy to receive a release from the committee. While the dinghy is away from the parent boat the crew of the latter may shut off their engine or leave it running, as they prefer, but any boat which drifts across the line between the two buoys will be disbarred. It will be to the boat's advantage to remain as close to the line (should the current be flowing away from it) as possible, to shorten the distance which the dinghy, returning with the release, will be obliged to cover. On his return, the man with the release will get aboard his boat, the dinghy will be again taken in tow, and the boat will proceed to the finish line.

The finish will be a straight line in front of the club pier, and the first boat to cross the line will be declared the winner, provided, of course, that its release has been obtained from the committee as above provided.

Navigation Contest

NATURE OF CONTEST—A flat board one foot square, painted green and with the initials of the club holding the event painted in black on top, is anchored in a certain spot in the Sound. The key to the location of this float is given on the government chart as the intersection of two lines running from four control points. A description of these control points, which may be buoys, lighthouses or prominent objects on land, will be furnished each contestant at the starting line prior to the warning gun.

All competing boats will start at the same time in the effort to locate this float, and the boat which finds it shall haul float and line aboard and report to the committee before dark. If two or more boats make up to the float at the same time, the boat to port shall have preference over the others, and at all times the rules of the road shall be observed.

STARTING LINE—Will be off the clubhouse between the committee boat and the club flag pole.

RECALL—Should a boat cross the line before the starting signal is given she will be recalled by the hoisting of a red cone and must return and start again.

PROTESTS—Must be made in writing within one hour after the return of the protesting boat.

From MOTOR BOATING Readers

This department of MoToR BoatinG *is maintained for the purpose of giving its readers opportunity to ask questions, reply to other correspondents' communications and submit ideas, suggestions, opinions or experiences which may be of interest and assistance to motor boatmen. There are no rules governing the department other than that postage must be enclosed when an answer by mail is desired, and that the name and address of the writer must be given in each instance. No anonymous contributions will be considered for publication, but initials or a pseudonym will be substituted for the writer's own name if the request be made. The editor does not, of course, hold himself responsible for statements made or opinions expressed by contributors to this department.*

Racing With the Wrong Rating

To the Editor of MoToR BoatinG:

Will you kindly give me the following information? Have entered two races run under the A. P. B. A. rules for 1915.

My boat is of the open type V-bottom, 22 feet 8 inches x 5 feet 4 inches; L. W. L., 22 feet 7 inches. Overhang aft, none. Fwd. 1 inch; beam, 5 feet 4 inches; waterline beam, 4 feet 6 inches; draft amidships 8 inches. Engine, 2-cylinder 2-cycle; bore, 4-inch; stroke, 3¼ inches. 700 r.p.m and rated at 6.12 h.p. My A. P. B. A. rating is 39.9. My boat is heavily built.

The boat that beat me in the two races is 18 feet x 4 feet over all with a 10 h.p. 2-cylinder 2-cycle motor and turns a larger propeller at 850 r.p.m. This boat is light and draws at the midship section 5 inches, only can carry two people, and my boat will hold eight. This boat makes close to 16 miles an hour and his rating is 42.

Now I am very much interested in racing, and have run in two races with this boat, knowing that he can beat me. In the last race he stayed alongside of me the whole course and just shot out at the finish.

We have twelve races this year and I would like to take part in same, but it is a waste of time to run my boat with this one with the rating he has. My boat is considered the fastest on the bay for length, beam and horsepower.

Do you think that these ratings are right? I think his or my rating is wrong, for when a heavy hull, 22 feet 8 inches x 5 feet 4 inches with a 6 h.p. motor has to give a handicap to a light hull 18 feet x 4 feet with a 10 h.p. motor turning a bigger wheel 150 r.p.m. more than the other boat, there looks to be something wrong.

Kindly let me know what your opinion is in the matter.

My boat is a V-bottom runabout type, but they have entered me under the open boat class. If I took off my hatches would that put me in another class?

C. S. M., Ozone Park, L. I.

[Either you have not given us the correct data, or else the person who measured your boat has made an error.

A boat having a waterline of 22′ 7″, a waterline beam of 4′ 6″, a draft of 8″, with a two-cylinder, two-cycle motor having a bore of 4″ and a stroke of 3½″, turning 700 r.p.m. will rate 39.9, according to the 1915 A. P. B. A. rules, and not 47.1, as stated in your letter. Also, a motor of the dimensions mentioned above will rate 6.85 h.p. and not 6.12.

You have not given us enough data to allow us to calculate the rating of the other boat mentioned by you, but by comparing the dimensions which you have given us with similar dimensions of your boat, we are strongly of the opinion that the rating of the above boat is away off. If you will send us the necessary data we shall be pleased to work his rating out for you.

We would suggest that you obtain from the secretary of the American Power Boat Association, Mr. A. L. Judson, Hotel Plaza, New York City, a copy of the racing rules of this association.]

Improves Speed by Taking Off Step

To the Editor of MoToR BoatinG:

Your previous advice reached me so late I had my boat, as previously explained with step 5 feet from stern, nearly completed, so decided to give it a trial, with the result that the stern and step caused bow to stick down and plow, water meeting across forward deck; in this condition she made 14 miles. I have taken her up and cut 2½ inches off from transom and continued deadrise, doing away with step, bottom being flat at transom. She now makes 15½ miles, thanks to your advice. I think I can still increase her speed with a different wheel and would very much like your advice if it is not presuming on your time too much. Boat is 15 feet 4 inches on water line, 4 feet 5 inches widest part water line. Engine, 2-cylinder, 4½-inch bore, 4-inch stroke, rated 12 h.p. at 800 r.p.m., 12 h.p. at 900 r.p.m. Makers claim will run 1,200 r.p.m., without damage to engine. We have semi-speed, 2-blade, 16 x 24-inch wheel and turning at 835 r.p.m. Makers advised us to use 14 x 24-inch or 26-inch. I thought pitch too great for this speed. Kindly advise us what diameter and pitch to use. Do you consider 15 or 16 miles per hour for this type of boat fair? Engine under forward deck. Hatch hinged and made to fold and lift off, making easy to start or get at engine, without taking hatch off; cockpit finished in quartered oak. Automobile type side steering wheel-bulkhead controls, by direct rods to timer and carbureter. Hull 20 inches deep in greatest part, ½-inch white cedar sides, deck; bottom, floor, etc., oak timbers. What could I get for such a boat put on the market fitted with such an engine and otherwise described above? What would it cost to advertise a small business, say, one boat per month? Would you kindly advise me as to the best time F. K. Lord's design you referred me to May and June, 1912, issues has made with such an engine as described above, 12 h.p. Model 2-0 Eagle.

S. J. R., Machipongo, Va.

[You are getting very good results out of this boat, as you now have it arranged, as 15½ miles an hour with a motor of this type is exceptionally good. The 14 x 26 wheel which is recommended by the makers is probably as good as any which you could install.

One of the boats built from the design by Mr. F. K. Lord, equipped with a single cylinder, 4½ x 4½ motor, turning 900 r.p.m., averages 11.8 miles an hour over an accurate course, with and against the tide.]

When is a V-Bottom a Hydroplane?

To the Editor of MoToR BoatinG:

Would ask your expert advice on the following:

Hull, 21 feet x 4 feet 4 inches on chine; V-bottom; scantling, ¾-inch single W. cedar; batten construction; double concave bottom; propeller, 10½ inches from keel and 15 inches from transom; rudder, outboard (bronze) shaft angle to W. L. about 8 degrees; strut, single arm, ⅝ inch x 5 inches section; hull draws about 2 inches at the knuckle; the transom concave being 1½ inches each side, and draws about 10 inches at the stern; engine set 1 foot aft amidships, i. e., C. of G. of engine. Tank, after end of cockpit or about 3 feet 3 inches from transom and is 20 gallons J. S. seamless steel.

Engine is 4¼ x 5 inches, 4-cylinder, 4-cycle motor, L-head, rated as 38-42 at 1,000. Engine and clutch weighs about 650 pounds and drives direct through a Blood joint at an angle of about 2 degrees. Wheel, 16 inches x 26 inches; Hyde, 3 blades. Speed, 15 miles per hour.

If the engine is opened wide and the clutch thrown in, instead of throwing you backwards, she moves away like some tug boat and gradually obtains a speed of 15 miles.

She seems to run as fast with the throttle and spark three-quarters open as with it wide open.

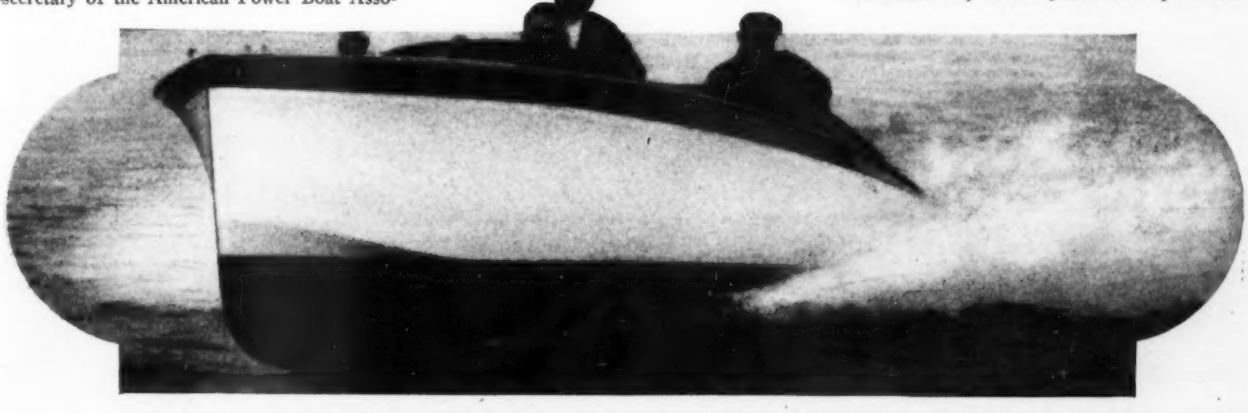
The hull is brand new, just being launched August 29, and the outfit is the best I could purchase. Now again, during launching, one if not two of the blades were slightly wrenched, but it is so slight I do not think it would make that much difference. This same wheel with the same engine drove a 24-foot 6-inch x 4-foot 6-inch V-bottom tub, as I would say, over 21 miles.

Should a 2-bladed wheel be used in preference to a 3 when turning over 700 r.p.m.? The official measurer of the D. R. Y. R. A. states that any V-bottom hull is a rank hydroplane. Now, I have designed this boat as a displacement hull and am within all A. P. B. A. rules except one, which I would like to have explained more fully. (One or more breaks in the long continuity of the immersed surface or an under body having one or more superimposed lifting surfaces.) He says that was added to cover V-bottom boats. Take the extreme displacement boat of to-day with the flat bottom and round bilge. That rides with about 4 feet of her nose out of water. What makes her do it? There must be a planing surface, and I say a convex plane isn't any more justified than a concave plane if they are to be called such.

Has he power to condemn a boat if she is within the law because she is V-bottom? I would for the benefit of myself and other readers in this section like your views on this V-bottom question.

W. R. S., Philadelphia, Pa.

[We agree with you that there must be something radically wrong with your outfit, because with a 40 h.p. motor in a hull of your type you should get from 20 to 25 miles an hour without any difficulty. We are not prepared to say just what the trouble is, but, of course, it may be that you are not obtaining the power which you think you are, due to some fault or imperfection of the motor. It is not strange that a used motor of the make you have should fall down considerably in its power output, for we have heard of quite a number of these acting very similarly to the one you have. Also it may be some fault of the wheel, that is, it may not have the pitch you think it has, and we would therefore suggest that you measure the pitch of each of the blades very carefully at several points of



Virginian, the 30-foot Hand V-bottom runabout, which makes 36 miles per hour with a 100 h.p. Van Blerck motor. This boat is owned by Dustin Farnum, and is used down in Maine

their surface and see if the fault lies there. Its diameter and pitch seem to be about right for 40 h.p. in a 21-foot V-bottom runabout.

In regard to your question whether your boat should be classed as a hydroplane under the A. P. B. A. rules, your contention that it should not be is absolutely right. A V-bottom boat is not a hydroplane unless it has one or more breaks in the longitudinal continuity of its immersed surface, or an under body having more than one lifting surface or an area of immersed transom exceeding 50% of the immersed midship section, the area taken at 50% of the load waterline.

Your statement that the bottom of any boat, whether it be of the displacement or hydroplane type, is a planing surface to more or less degree, is absolutely correct, but by referring to the definition of the hydroplane given above, and also on page 69 of the A. P. B. A. rules for 1915, you will see that to be a hydroplane this rule specifically states it should have an under body having *more* than one lifting surface. A V-bottom runabout has only one lifting surface, and is therefore not a hydroplane if she fulfills the other two conditions mentioned above.

We would suggest that you obtain a copy of the Racing Rules from the secretary of the A. P. B. A., Mr. A. L. Judson, Hotel Plaza, New York City. The price of same is fifty cents.]

Of Interest to Those Southward Bound

Yachtsmen who go to Florida for the winter and thence to the Bahamas will be interested in knowing that an American yachtsman, M. W. Strong, New York, has bought Catalina, the first island sighted forty-five miles due east from Miami, and has erected a winter-home thereon.

We understand that yachtsmen are very welcome when they call; there are no stores and nothing for sale on the island, but it gives an opportunity of seeing the charm of some of these tropical islands. The harbors are good, and with excellent fishing it should make a refreshing break in the journey for Nassau.

Wheel for a 25-Footer

To the Editor of MoTor BoatinG:

Wish you would advise at your convenience as follows: Have just completed boat 25 x 8 ft., V-bottom after plans by by Bacon published in MoToR BoatinG, June and July, 1913. Have installed engine, 4-cylinder, 4-cycle, 4¼ x 4¼ inches, about 800 revolutions. What I wish to know is size and pitch of wheel. As the boat is constructed, the keel extends to rudder step and would take an 18-inch wheel, but by cutting notch in keel could make room for 20-inch wheel.

C. H. P., South Norwalk, Conn.

[It appears to us that the best wheel would be one having three blades 17 inches in diameter by 18 inches pitch. It may be that you will not be able to obtain a wheel of this diameter, as it is sort of an odd size, in which case, we would suggest that you purchase one having a diameter of 18 inches, and try that out. If it does not give satisfaction, or will not allow your engine to speed up to 800 r.p.m., then you should cut a little off the tip of each blade.

Bringing the boy up right

A Cruiser with 1,000 H. P.

One of the most interesting new boats of 1915 is Cabrilla, a 111-foot high-speed motor cruiser, designed by William Atkin, of Huntington, L. I., for Commodore August Heckscher, of the Huntington Yacht Club. Cabrilla was built by the Atkin-Wheeler Co. at their yards at Halesite, L. I., and is powered with two 8-cylinder, 8x14-inch V-type Achilles motors, especially designed and built by the Atkin-Wheeler Co. Each motor develops 250 h.p. at 600 r.p.m., and 500 h.p. at 1,000 r.p.m. At the former engine speed Cabrilla has a speed of 26 miles per hour, and at 1,000 r.p.m. she has little trouble in showing a speed of 30 miles an hour.

The overall length of the hull is 111 feet, its beam 12½ feet, with a normal draft of 4½ feet. With the exception of the planking, which is 1¼-inch yellow pine, the 2x2-inch frames and the stringers which are made up of three laminations of 2½x2½-inch stock, the entire finish is in Venesta birch, imported from Russia. This wood, although the supply is very limited at the present time on account of foreign conditions, is bound to have a prominent place in the list of high-class yacht building material in the near future. It is a veneer made up of a various number of thicknesses, put together with a water-proof cement. For example, the wood used for the deck of Cabrilla consists of six thicknesses of ⅛-inch birch.

The power plant and its auxiliaries used in Commodore Heckscher's new boat is one of the most elaborate and complete ever installed in a yacht. Fuel tanks are provided for 1,200 gallons of gasoline, and house plumbing is installed throughout, instead of the usual yacht plumbing. A form of drainage system, employed in many country estates is one of the features of this craft. There are fresh and salt water pressure tanks in addition to a fresh water capacity of 600 gallons. The electric system is complete to every last detail. A 12 kw. generator independently driven by a Beaver 4-cycle motor is installed for charging the 120-volt Edison storage battery system, which supplies current for the various electrical units. There are electrical air and fresh water pumps together with numerous electrically driven bilge and fire pumps.

Commodore Heckscher is planning to use Cabrilla as a ferry between his home at Huntington and New York City, a distance of 33 miles.

Has the Right Idea

To the Editor of MoToR BoatinG:

Enclosed find photograph which was snapped by one of my neighbors through the window. It is quite evident that the subjects were not posed for the picture, and just what the joke was I do not remember, although the boy seemed to enjoy it. I am sending you this as I am unable to determine whether it is an advertisement for MoToR BoatinG or for the Sterling engine; it might be considered one of each. At any rate, I will leave it for you to decide. From the cover of the magazine it is evident that we were looking over some old numbers.

Wm. G. Allen, Portland, Me.

Dept. of Commerce Flags

The Department of Commerce has adopted the following flags for the use of the secretary of commerce, the assistant secretary of commerce, the commissioner of fisheries, the commissioner of lighthouses, the superintendent of the coast and geodetic survey, and the commissioner of navigation:

The flag of the secretary of commerce will be a full-rigged ship, in blue, over a lighthouse, in blue, in a white shield on a blue field, and have a five-pointed white star in each corner of the flag.

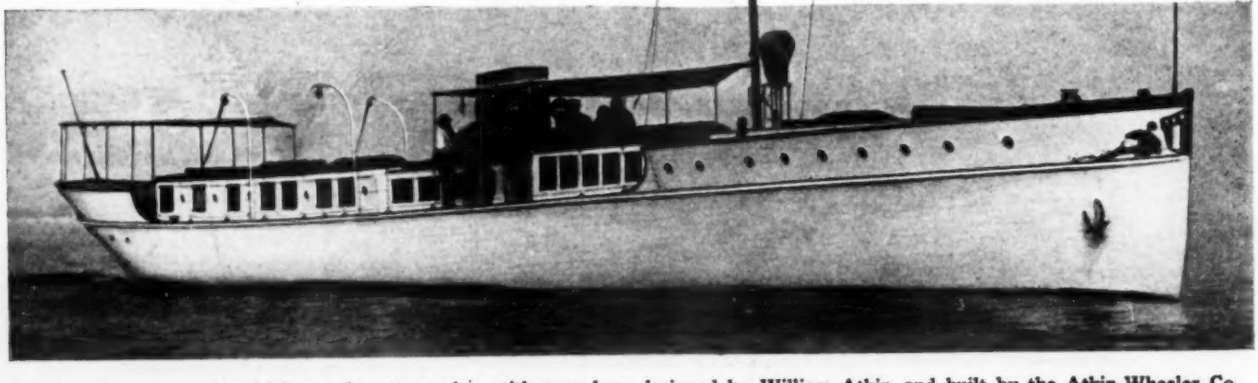
The flag of the assistant secretary of commerce will be the same as that of the secretary of commerce, except that the colors will be reversed.

The flag of the commissioner of fisheries will be blue, with a white fish in the center with its head toward the hoist. The service flag of the bureau of fisheries is blue, with a white fish on a red diamond.

The flag of the commissioner of lighthouses will be blue, with a white triangle bearing a blue lighthouse. The service flag of the bureau of lighthouses is triangular in shape, white, with a red border, bearing a blue lighthouse.

The flag of the superintendent of the coast and geodetic survey is a white triangle, base toward the hoist, on a blue field. The service flag of the coast and geodetic survey is a red triangle, base down, in a white circle on a blue field.

The flag of the commissioner of navigation will be blue, with a full-rigged ship, in white, in the center. The service flag of the bureau of navigation will be a full-rigged ship, white, in a red circle on a blue field.



Cabrilla, the new 111-foot high speed motor cruiser with 1,000 h.p., designed by William Atkin and built by the Atkin-Wheeler Co.

AMONG · THE · CLUBS

Up at the New York Motor Boat Club at this time of year the motor boats have nearly all entered on the sleep which lasts until the tapping hammer and scraping knife are busy with the first warm day of spring

New York-San Francisco Race Called Off

The New York to San Francisco motor boat race which was to have started October 1st was the cause, first and last, of forcing many individuals of greater or less prominence into the club of bum sports. Not only was the race unmercifully pilloried in print, by those whose every interest should have lain with a successful contest, but the finance committee of the Panama-Pacific International Exposition added insult to injury by first withdrawing its proffered $10,000 prize money, and then cancelling the race altogether at the eleventh hour. As the entrance fee of at least one boat had been paid in good faith and accepted by the Exposition authorities, it is considered likely that the latter body will continue to hear about the race for some time to come.

No censure can be directed against the Eastern Committee, whose chairman, Thomas D. Bowes, was appointed by the American Power Boat Association at the request of the Exposition people a year and a half ago. It was the duty of this committee to arrange the details as to requirements, start, measurement, stopping places, etc., just as the California Section of the A. P. B. A., was to have taken care of the finish, and it did not lie within the province of either committee or of the A. P. B. A. itself to cancel the race even if it had wanted to. On the contrary, the Eastern Committee worked hard to make the event a success, and up to the time of its cancellation had induced one syndicate to have a boat designed and built especially for the race and had secured the promise of two other entries and one post entry. This in spite of adverse criticism from certain quarters, and despite the unsettled conditions throughout Mexico, particularly on the west coast, where the advertised itinerary specified Salina Cruz and Mazatlan as ports of call or checking stations. Other considerations which made the securement of entries difficult were occasional rumors to the effect that the race had been called off, and the general business apathy which prevailed during this time.

The Eastern committee held a meeting at Mr. Bowes' office recently, in which it was decided to make clear to the motor boating public its position in the matter as well as to state formally its regret that the Panama-Pacific International Exposition has acted as it has.

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Ambrose Channel Annual Regatta

The annual regatta of the Ambrose Channel Yacht Club (Commodore Emil Steffens), held recently, was the largest ever held by this club. Dancing both afternoon and evening was enjoyed immensely by the members' families and friends, and handsome cups were awarded to the winners in five hotly contested races. The cruiser race, over a 10-mile triangular course, was won by Blanchwood, A. A. Raynor, owner; in the standing cabin class over the same course, Annie J., owned by George Wayre, was the winner; and of the open boats, over 20 feet in length, also covering this course, Mildred W., owned by John Walters, led the field. Over a 5-mile triangular course the little Americus, owned by L. M. Selling, came in first in the under-20-foot class. The Bang-and-go-back race was won by Content, owned by R. Flegel.

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Tamaqua Yacht Club Cruiser Cup Race

The Tamaqua Yacht Club, of Jamaica Bay, pulled off a race for cruisers, on October 9th, in which there were twelve starters and ten to finish. The course, which was 45 miles in length, lay from the Oriental Hotel to Scotland Lightship and return. First prize was a $50 cup offered by A. W. Middleton, whose cruiser Grace Irene was fortunate enough to come in first. Second place was taken by Dana S., owned by Dana Sievert, and third position went to H. H. Heyman's Cachalot. Second prize was a $20 gold piece offered by Harry Haggerty, of the New York Athletic Club, and the third prize was a binnacle. Perfect weather, from the standpoint of both the racers and the shore fleet marked the day, and the contest was considered a success in every respect.

Gold Cup Date Set

It has been definitely announced that the fourteenth contest for the A. P. B. A. Gold Cup will be held at Detroit, Sept. 2-4-5, 1916.

Riverview Club Formed at St. Louis

With a determination to provide for St. Louis yachtsmen and their Mississippi Valley friends as fine a clubhouse and other accommodations as are to be found in the country, a committee of St. Louis business men has formed the Riverview Club, which will very shortly erect a very fine clubhouse on the bank of the Mississippi River, ten miles north of the business center of the city.

The club grounds will include ten acres running from Riverview Drive to the river with Water Works Park rising two hundred feet above the river in the background. The location is very accessible by Riverview Drive and the municipal car line and it is proposed also to have express launch service running on half hour schedule between the club grounds and the business district.

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Situation of Baltimore Clubs Unsettled

A few months ago when the Western Maryland Railway announced that it had purchased Ferry Bar, the present home of the boat clubs of Baltimore, it was thought by every one that the clubs would undoubtedly move to Fort McHenry, the famous historical spot of Baltimore. The plan was discussed and taken up with the park board, which has had Fort McHenry under its jurisdiction since that place was turned over by the United States Government to the city of Baltimore. The officials of the various boat clubs situated at Ferry Bar went into long conferences with the park board, but could not convince that body that the boat clubs should have their future home at Fort McHenry. The question was not discussed until the advent of J. Cookman Boyd, former commodore of the Maryland Motor Boat Club, as member of the board, when he brought it up again.

In his speech before the park board, Mr. Boyd said that the moving of the boat clubs would be a great help to the city and would increase the interest in water sports and maritime matters.

The contract which the boat clubs are willing to enter upon is as follows:

For the removal of the Arundel and the Maryland Motor Boat Clubs' buildings, at a cost not exceeding $5,000 each, and the removal of the Ariel Boat Club's building, at a cost not exceeding $4,000. Upon the removal of the buildings to Fort McHenry they are to become the property of the city, the clubs paying an annual rental for them, which is to include interest on the amount spent in moving them to their new location and in putting them in condition. In addition each of the clubs is to pay to the city annually $1 for each member above 250 for the Arundel and Ariel Clubs, 150 for the Corinthian Boat Club and 200 for the Maryland Motor Boat Club. The city is to have the authority to make regulations for the use of the buildings, the conduct of the members, to impose penalties for violations of the rules with the understanding that if repeated the offending club will have have its contract terminated. Twelve to eighteen years shall be given the clubs to pay the cost of their removal. At the expiration of this time the clubs are to pay an annual rental of $500 each, for the use of buildings and surrounding grounds. The clubs are to be rented year by year, the city having the right to terminate the leases at any time on giving ninety days' notice.

Winners of the Record Trophy race held on the Delaware—Dippie Da, owned by E. B. Jackson, and Xqqme, owned by Commodore Vanderslice, of the Camden Motor Boat Club. The center illustration shows the Riverton Yacht Club

MoToR BoatinG's Annual Review of Racing

Summary of American Power Boat Association Sanctioned Races

Name of Boat	Owner and Club	Distance Nautical Miles	Club Holding Race	Class (Local)	Elapsed Time	No. of Cyls.	Bore & Stroke	R.P.M.	H.P.	L.W.L.	Area M. S.	Rating
Flyaway III	F. L. Upjohn, Huntington	235	N. Y. M. B. C.	Cruisers, Under 50	12:34:37	6	5½x6	1100	78.408	37.83	7.55	71.73
Satsun	T. Farmer, Columbia	235	N. Y. M. B. C.	Cruisers, Under 50	31:41:45	2	4½x6¾	600	10.73	28.55	9.594	32.66
Cero	W. F. Frost, Columbia	100	N. Y. A. C.	Cruisers, 28-50	12:07:00	2	6 x8	400	15.08	39.58	16.64	32.15
Intrepid	H. F. Rudinger, N. Y. M. B. C.	100	N. Y. A. C.	Cruisers, 28-50	12:46:00	2	5 x7	470	10.79	31.83	11.703	31.185
Flyaway III	F. L. Upjohn, Huntington	183	Colonial	Cruisers, 28-50	10:21:21	6	5½x6	1100	78.408	37.83	7.55	71.73
Cero	W. F. Frost, Columbia	183	Colonial	Cruisers, 28-50	25:09:32	2	6 x8	400	15.08	39.58	16.64	32.15
Flyaway III	F. L. Upjohn, Huntington	112	Columbia	Cruisers, 28-50	5:56:45	6	5½x6	1100	78.408	37.83	7.55	71.73
Bonnie Doon	W. L. Oliver, S. F. Y. C.	25.2	Cal. Section	Cruisers	2:31:38	..	.....	....	.....	.....	.....	34.8
Kichicoquillas	A. Long, S. F. Y. C.	25.2	Cal. Section	Cruisers	3:10:40	..	.....	....	.....	.....	.....	40.9
Laola	J. Hawkins, P. M. B.C.	24.2	Cal. Section	Cruisers	3:31:04	3	6½x8	360	23.89	40.75	18.19	36.6
Bonita	Short, C. Y. C.	24.2	Cal. Section	Cruisers	3:49:29	..	.....	....	.....	.....	.....	36.9
Taureg II	L. Kramer, Chelsea	42	Ocean City Y. C.	Cruisers, All Ratings.	6:11:32	3	5¼x6	420	13.64	38.116	13.04	33.48
Margeth	J. N. Bower, Chelsea	42	Ocean City Y. C.	Cruisers, All Ratings.	5:18:51	4	4⅛x5½	520	14.32	31.89	6.569	41.40
Engenia	E. Swayne, Flat Rock	188	D. R. Y. R. A.	Cruisers, All Ratings.	22:22:28	3	4¾x5	595	13.18	32.3	8.467	37.54
Marguerite II	A. B. Cartlege, Keystone	188	D. R. Y. R. A.	Cruisers, All Ratings.	17:32:30	8	6½x8	450	79.83	64.28	24.443	53.38
Dora II	B. Arishoff, Riverside	368.5	D. R. Y. R. A.	Cruisers	53:05:50	2	5 x6	480	9.42	29.62	9.268	31.8
Jennie S	G. Stock, Camden	368.5	D. R. Y. R. A.	Cruisers	49:57:25	2	5½x6¼	582	14.4	32.28	8.814	37.53
Mercury	H. L. Burleson, Pacific M. B. C.	11	S. F. Y. C.	Cruisers	0:54:17	6	5½x6	500	64.15	57.46	11.87	57.8
Bittersweet	W. S. Vare, Chelsea	42	Ocean City Y. C.	Exp. Cruisers, All Ratings	2:27:34	6	5 x6¾	900	54.376	34.798	5.488	70.16
Daneva II	C. H. Strecher, Chelsea	42	Ocean City Y. C.	Exp. Cruisers, All Ratings	2:27:32	6	5½x6	800	53.69	37.125	5.446	70.47
Charmian II	C. H. Manly, Maryland	368.5	D. R. Y. R. A.	Express Cruisers	27:29:00	..	.....	....	.....	.....	.....	.....
Amorita	W. T. Randolph, N. Y. M. B. C.	235	N. Y. M. B. C.	Open Boats	15:04:20	4	4¾x5½	1020	33.136	24.979	3.512	65.03
Eastern Star	E. L. Finch, N. Y. M. B. C.	235	N. Y. M. B. C.	Open Boats	14:46:50	6	4¾x5½	1100	53.603	28.542	4.412	72.34
Margaret M	C. P. Tilton, Atlantic City	16.07	Barnegat Bay Section.	Open Boats	0:59:09	4	4½x5	1025	27.16	25.93	2.816	65.88
Snap Shot	R. K. Pearce, Island Heights	16.07	Barnegat Bay Section.	Open Boats	1:06:31	4	3½x5	1250	16.03	16.04	1.79	59.32
Anna E	F. B. English, Holly Beach	12	Ocean City Y. C.	Open Boats, Rating Under 40	1:21:03	4	3⅛x4	640	8.2	19.42	2.399	39.78
Pet	G. C. Fleck, Chelsea	12	Ocean City Y. C.	Open Boats, Rating Under 40	1:39:41	1†	4 x4	704	3.93	17.64	1.92	36.81
Selma	B. S. Strubmüller, Sea Isle	12	Ocean City Y. C.	Open Boats, Rating 40-60	0:45:20	3†	4 x4	1000	16.76	17.60	2.154	57.42
Silver Heels II	A. C. Gilmore, Stone Harbor	12	Ocean City Y. C.	Open Boats, Rating 40-60	1:01:32	2†	4½x4	860	12.15	13.33	2.09	49.80
Vasey	F. Nelms, Ocean City	12	Ocean City Y. C.	Open Boats, Rating Over 60	0:40:59	4	4⅛x5½	976	26.89	25.08	2.67	66.42
Mary Jane	J. M. Rowland, Ocean City	12	Ocean City Y. C.	Open Boats, Rating Over 60	0:40:05	4	4⅛x5½	1080	29.75	24.61	2.719	68.14
Rambler	E. C. Headley, Camden	24	D. R. Y. R. A.	Glass Cabin, All Ratings	2:39:14	4	4 x6	800	20.1	24.363	5.00	47.88
Mermaid	C. H. Shaw, Riverside	24	D. R. Y. R. A.	Glass Cabin, All Ratings	3:04:31	2	5½x6	440	13.4	37.76	9.533	42.87
Agnes	C. Zettner, Keystone	9.58	D. R. Y. R. A.	Open Boats Rating Under 45	1:39:09	1†	4 x4½	550	3.46	15.92	2.777	30.76
Marion	H. O. Platt, Keystone	9.58	D. R. Y. R. A.	Open Boats, Rating Under 45	1:36:19	2†	3¼x3½	580	3.86	17.62	2.832	32.04
Spider	J. M. Rutter, Keystone	9.58	D. R. Y. R. A.	Standing Top Rating Under 45	1:34:10	1	5 x6	580	5.41	23.54	5.384	30.47
Kathryn	J. H. C. Talbot, Keystone	9.58	D. R. Y. R. A.	Standing Top Rating Under 45	1:32:14	1	6 x7	360	5.91	21.67	3.776	35.84
Mecca	J. L. Shackelford, Camden	9.58	D. R. Y. R. A.	Open Boats Rating 45 and Over	1:07:57	2†	4½x4½	750	11.93	25.00	2.366	52.77
Napoleon I	W. H. Bartlett, Atlantic City	16.07	Barnegat Bay Section.	Displacement Racers.	0:54:22	..	.....	....	.....	.....	.....	47.14
Skipping Maris.	G. T. Lippincott, Atlantic City	16.07	Barnegat Bay Section.	Displacement Racer.	1:06:57	4	4¾x5	.....	.....	.....	.....	46.33
J. M. R.	J. M. Rowland, Ocean City	24	Ocean City Y. C.	Displacement Racer.	1:00:49	4	5½x6¾	.....	7.28	.....	3.30	53.00
Skipping Maris.	G. T. Lippincott, Atlantic City	24	Ocean City Y. C.	Displacement Racer.	1:23:58	4	4¾x5	.....	39.377	.....	2.376	46.33
Fame	F. A. Nathan, Island Heights	5.36	Barnegat Bay Section.	Scratch Race for Hydroplanes	0:14:02			Not Measured for Rating.				
Homer	W. T. Reed, Atlantic City	5.36	Barnegat Bay Section.	Scratch Race for Hydroplanes	0:14:17			Not Measured for Rating.				
Miss Detroit	Miss Detroit P. B. A.	90	L. I. S. M. B.A.	Unrestricted	2:30:13	8	5½x6¾	Not Measured for Rating.				
Tech, Jr.	C. duPont, Atlantic City	90	L. I. S. M. B.A.	Unrestricted	4:05:00	8	5½x6¾	Not Measured for Rating.				
Tech, Jr.	C. duPont, Atlantic City	1	L. I. S. M. B. A.	Unrestricted	0:01:17+	8	5½x6¾	Not Measured for Rating.				
Presto	C. Fisher, Cleveland	1	L. I. S. M. B. A.	Unrestricted	0:01:21+	8	5½x6¾	Not Measured for Rating.				

† *Indicates two-cycle motor*

The Speed Boat Events and Their Winners

Event	Winning Boat	Length of Course	Motor and Power, 1915 Winner	WINNER'S SPEED (M.P.H.) 1915	1914	1913	1912	1911
Mississippi Valley, Class A	Panama	5	Capitol—50	*22.5				
Mississippi Valley, Class B	P. D. Q. V.	5	Johnson—60	*32.8	*28.2	*24.1	*26.2	*27.5
Mississippi Valley, Class C	Ugly Duckling IV	10	Pierce-Budd	*36.25	*32.5	*28.1	*34.3	*28.8
Mississippi Valley, Class D	Dodger IV.	15	Van Blerck—150	*34.5	*30.4	*37.0	*35.8	*27.0
Mississippi Valley, Free-for-All	Buffalo Enquirer	25	Sterling—200	*39.2	*37.0	*44.7	*34.8	*32.0
Wrigley Trophy Race	Disturber IV.	30	Deusenberg—1,000	*54.326	¶	*42.0	*38.5	¶
Chicago Half-mile Dashes	Disturber IV.	½	Deusenberg—1,000	*61.503	¶	¶	¶	¶
Gold Challenge Cup	Miss Detroit	30c.	Sterling—250	*48.5	*50.49	*44.5	*36.8	*32.6
A. P. B. A. One-mile Dashes	Tech, Jr.	1c	Sterling—250	*54.46	51.8a	¶	¶	¶
Mississippi Valley One-mile Dash	Event not held in 1915			¶	*54.54	*48.0	*53.7	*38.7
Pacific Coast Free-for-All	Oregon Kid	20	Van Blerck—135	*39.0	*24.2	*38.4	*38.9	*32.9
British International Trophy	Race not held in 1915			¶	¶	*49.2	*42.6	*40.5
National Carnival (Unlimited Class)	Races not held in 1915			¶	*28.5	*38.3	*38.9	*28.5
Buffalo Races	Races not held in 1915			¶	*50.2	*43.2	*46.3	*39.7
Hydroplane Championship, South Jersey	All boats failed to finish			.....	.....	27.8	¶	¶
Hydroplane Championship, Delaware River	Cahetis II.	29c.	Van Blerck—70	28.5	37.0	37.4	26.8	¶
Mile Championship, South Jersey	Tech, Jr.	1c	Sterling—250	52.37a	52.4	¶	39.5a	¶

¶ *Indicates race not held*
c *Nautical miles*
* *Speed in fastest race of heat races*
a *Average, admiralty conditions*

The Long Distance Cruiser Handicap Events

Event	WINNERS OF CORRECTED TIME PRIZE Winning Boat	Length Course	Elapsed Time	WINNERS OF FAST TIME PRIZE Winning Boat in 1915	Time 1915	Time 1914	Time 1913	Time 1912
Philadelphia-Bermuda		734c	¶	.....	¶	¶	85:55:20	104:29:05
Baltimore-Camden	Dora	368½c	33:05:50	Charmian II	27:27:00	23:50:00	¶	¶
New York-Albany and Return (Cruisers)	Flyaway III.	270	12:34:37	Flyaway III.	12:34:37	23:42:22	23:55:51	27:35:25
New York-Albany and Return (Open Boats)	Amorita	270	13:32:55	Eastern Star	14:46:50	18:44:25	¶	29:22:42
New York-Cornfield and Return	Flyaway III.	270	12:34:37	Flyaway III.	10:21:21	13:00:10	21:47:11	20:40:50
New York-Block Island	Cero	100c	12:07:00	Flyaway III.	5:40:20	10:10:00	10:30:00	10:45:00
Record Trophy Race	Eugenia	97	10:16:35	Caprice	7:55:55	8:50:38	¶	¶
Delaware R. Y. R. A.	Eugenia	178	22:42:20	Marguerite II.	17:33:04	17:46:27	17:26:42	¶
Pacific International		115c	¶		¶	13:09:30	11:20:00	¶

N. B.—See explanation of signs above.

New Things For MOTOR Boatmen

Old Sol Emergency Lantern

The Hawthorne Manufacturing Company, Inc., of Bridgeport, Conn., has just introduced a portable electric lantern for marine use, intended primarily to meet the new government regulations regarding safety lights on passenger steamers, but useful also as an emergency light on motor boats. As may be seen from the illustration this lantern may be strapped to the wall; it is fitted with a bulls-eye reflector and the switch on top of it makes the current of the batteries instantly available should the regular lighting system fail for any reason. The price quoted is $2.

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Justrite Carbureter

A carbureter which has a single jet and controls the flow of mixture by means of a sliding venturi tube instead of the conventional butterfly valve, is the Justrite, marketed by the Wilcke-Armstrong Co., of Detroit, Mich. There is one air inlet and the conventional float control for the fuel, but after the fuel is sprayed, the mixture passes between a cone-shaped member and the venturi and up into the motor. When the sliding member is all the way down no mixture can flow, because the passage between venturi and cone is closed. There is only one adjustment, and this is for idling. The price is $20 for the 1-inch size, $12.50 for the ¾-inch, and $25 for the 1¼-inch.

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Prest-O-Lite Cooking Outfit

A combination camp lighting and cooking outfit which will be found invaluable by the small boat owner whose craft is not furnished with galley facilities has been announced by the Prest-O-Lite Co. of Indianapolis, Ind. The outfit consists of a Prest-O-Lite tank fitted with a gas burner, and a stove which uses Prest-O-Lite gas.

With this outfit it is possible to cook a meal and at the same time use gas from the tank for illuminating purposes. This is possible by the use of a special two-way valve union, which also allows of the stove or burner being used separately. The stove weighs only six pounds and the cost of operation is from eight to fifteen cents per hour depending upon the size of the flame used. The heat of the full flame is sufficient to boil one quart of water in three minutes and the gas consumption with such a flame is about three and a half cubic feet per hour. The stove, with six feet of cloth-covered rubber hose, lists at $4.50, the special union at seventy-five cents and the lighting attachment at fifty-five cents.

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Hyde "Gale" Propeller

In order to meet the demand for a medium priced propeller, the Hyde Windlass Co., of Bath Me., manufacturer of the Hyde turbine type propeller, has just put on the market a propeller called the "Gale." This wheel is made of a cheaper bronze than is used in the Hyde, and is not guaranteed by the manufacturer, nor does it have the Hyde trade-mark, but the regular Hdye patterns are used, thereby enabling the purchasers to get the same diameters and pitches as they would in the Hyde. This wheel can be obtained in practically any diameter or pitch, in either right or left hand from eight to fifty inches in diameter, and in two, three or four blades. The manufacturer declares these new wheels will undoubtedly give good satisfaction, although they will be furnished with emery finish only, while the same care regarding balance cannot be given at the prices the Hyde Company is quoting.

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"In Morgan's Wake"

This volume by A. Hyatt Verrill is a companion book to The Cruise of the Cormorant already mentioned in these pages. It deals with the cruise of two American boys with their uncle and an old sea captain, from Havana, down through the West Indies and on to Trinidad, covering territory untouched in the boys' other cruise. This volume is really a glorified guide book, facts and information about the islands which the boys explore being told in interesting dialogue instead of in the approved Baedaeker fashion. There is not so much information as to weary juvenile readers and there is enough blood and thunder to afford a mild stimulant, while the subject matter and its manner of handling are sufficiently interesting to attract the attention of the grown-up reader.

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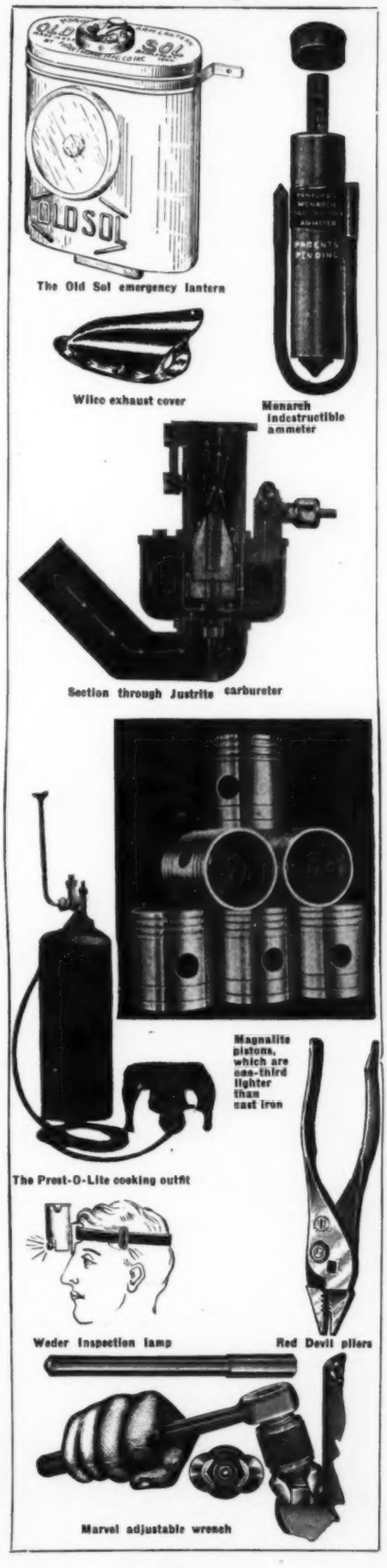
Monarch Indestructible Ammeter

The Hercules Company, Inc., of Mount Vernon, New York, is manufacturing and selling Benford's Monarch indestructible ammeter for which several points of superiority are claimed. In the first place, it is stated that this instrument may be given the roughest treatment without destroying its efficiency, and secondly, it is declared that it will give a correct reading on partly used dry cells. This ammeter consists of a solenoid or coil wound on a small brass tube and tightly shellacked thereon. This tube or tongue is fitted with weights, and in testing the dry cell a charge passes through the solenoid which acts as a magnet to draw the tongue upward, the weights bringing it back when the connection is released. In order to make an accurate reading it is necessary that the ammeter be held in an upright position, but it is stated to test accurately when applied to either pole. The cost is $1.


The Old Sol emergency lantern
Wilco exhaust cover
Monarch indestructible ammeter
Section through Justrite carbureter
Magnalite pistons, which are one-third lighter than cast iron
The Prest-O-Lite cooking outfit
Weder inspection lamp
Red Devil pliers
Marvel adjustable wrench

The Wilco Exhaust Cover

As a part of its extensive line of marine hardware the E. J. Willis Co., of 85 Chambers St., New York, is putting out the Wilco Exhaust Cover designed for use over the exhaust connection on the side of the boat, as a means of preventing the gases from coming into the boat. This device may also be used as a ventilator on the deck or hatch cover for ventilating the engine department. It is made of highly polished brass in three sizes, and is sold at prices ranging from $1.50 to $3.50.

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Magnalite Pistons

The Walker M. Levett Co., 10th Ave. and 36th St., New York, is marketing Magnalite pistons which are claimed to have several advantages over pistons made of iron. Magnalite is magnalium metal especially adapted for piston construction, and is stated to have a tensile strength far in excess of that of ordinary cast iron; a thermal conductivity, which is declared to be fourteen to one as compared with iron, and a weight approximately one-third that of a cast iron piston of the same design. Advantages claimed for these pistons in cruising engines are greater flexibility, higher maximum speed, reduced consumption of fuel, less vibration, minimum strains and wear on connecting rods, bolts and bearings and a much cooler engine. Especial attention is directed at this time to the fact that Disturber IV, the first boat to maintain an average speed in excess of 60 m.p.h., is fitted with Magnalite pistons.

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Jumbo Spark Plugs

The Gibson-Hollister Mfg. Co., 3380 Washington St., Jamaica Plains, Mass., is marketing Jumbo spark plugs for marine use in three types, namely: Jumbo Jiant, $1.25; Jumbo regular, $1, Jumbo Junior, 75 cents Jumbo plugs have the electrodes sloped toward the points of contact, so that oil will be kept away from the sparking points, thus preventing fouling. Another feature is that mixture cannot escape around the center electrode because of the use of a special elastic cement. Between the shell and the porcelain insulator is an asbestos washer to allow for downward expansion of the porcelain. The latter is said to be of such material as to withstand tremendous heat without cracking. The center electrode is of unusually heavy material, so to give decidedly efficient service under extreme heat conditions. It is stated that the shell is so finished that rusting is prevented.

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Gomor, a Lubricant

This is a lubricant which is stated to contain nothing whatever injurious to motors and which is poured into ordinary gasoline and thus introduced into the cylinders through the carbureter with the fuel. Its purpose is to reduce gasoline consumption, reduce and prevent the formation of carbon and assist in the lubrication of parts which cannot be reached by ordinary oiling methods. The manufacturer declares that when admitted to the cylinder with the fuel, it lives through the heat generated at every explosion and is released and sprayed on to the cylinder walls, pistons, valves, etc., thereby continually keeping a thin film of oil on the vital bearings of the motor. A fuel saving of twenty-five per cent is claimed for this lubricant, which is used in the proportion of two ounces to five gallons of gasoline. Bass Bros., of 82 Walker Street, New York City, are the eastern agents, and the preparation is quoted for sale at $2.50 per gallon.

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Weder Inspection Lamp

An inspection lamp which may be attached to the forehead by means of an elastic band has been brought out by the Weder Mfg. Co., Stenton Ave., Philadelphia, Pa. The Weder uses a dry-cell box three inches long with a small bulb attached at the bottom and so positioned as to throw the light straight ahead. The lamp can be used effectively in making repairs around a motor, and is especially advantageous when both hands are needed to do the work.

• • •

Red Devil Pliers

The Smith & Hemenway Co., 150 Chambers St., New York, has introduced Red Devil Pliers, which may be used as a Prest-O-Lite tank key as well. The material is drop-forged steel and the handles so shaped that a firm grip may be obtained. The jaws are narrow so that out of the way parts may be gripped. The price is 60 cents for the 5-inch size.

• • •

Marvel Adjustable Wrench

A three-part adjustable socket wrench which will handle all sizes of nuts, and grips mutilated nuts as well, is the Marvel, announced by the Marvel Accessories Mfg. Co., Sixth St., Cleveland, O. A decided feature of the Marvel is that it can be used on nuts which are in inaccessible places. It is stated that it is better adapted for general work than a socket wrench set, for the reason that it is adjustable and hence a whole set of sockets need not be carried; also the chuck is at right angles to the handle and hence parts in out-of-the-way places may be conveniently tightened or loosened. The price is $3.

YARD AND SHOP

As to Lifeboat Cruisers

Our amiable and old-fashioned windjamming contemporary seemed to have let its forefoot slip in the September issue in answering a correspondent's query as to lifeboat cruisers, for it made the statement that "these boats are freaks. Why build a freak when for the same money you can have a real boat? They have nothing to recommend them for cruising and much to damn them." A strict regard for the truth compels us to take up the cudgels for this type of boat, which, as designed by our friends, the Holmes Motor Company, is anything but freakish, while having much to recommend it for cruising. We would be the last to try to convince the boating public that it is the only boat worthy of consideration, for we know that ideas about the proper thing in boat construction are as many and as far apart as the rivers which flow into the Atlantic, so that the proverb, "What's one man's poison, Signor, is another's meat and drink," is fully applicable to boat arrangement; but there are some outstanding features of the Holmes lifeboat cruiser which cannot be disregarded by the most ardent adherents of other types of boats—in which class we, by the way, in our editorial capacity, can also place ourselves. For instance, this type of boat is seaworthy—thoroughly and efficiently seaworthy—and, owing to the heavy outside keel, is so nearly vibrationless that in standing in the cockpit one can hardly tell when the motor is running. Then, too, the sleeping accommodations, although reminiscent of Pullman cars, are ample, while the day accommodations leave nothing to be desired; the principle of isolating the motor from the rest of the boat is a good one, and the speed obtained from the power installed is excellent. In addition the sail spread is generous and efficient.

In writing to us recently the Holmes Company, through its treasurer, Philip H. Farley, told us that the fact that the company holds a patent on this type of boat need discourage no one from building, as the company is willing and ready to furnish templates for every part of the boat, so that a man can build it himself or have his builder construct it for him, the templates being furnished at a cost no greater or even less than he would have to pay if he had plans drawn up by a naval architect.

We do hate to see a man's prejudices run away with him, as they seem to have done in the present case. Every man is entitled to a personal opinion, but when we read that "they (the lifeboat cruisers) have nothing to recommend them and much to damn them," we feel that such a blanket denial of merit has an animus of some sort behind it.

St. Louis Yacht and Boat Company's Bulletin

An extremely attractive bulletin (No. 320) comes to us right off the press from the Saint Louis Yacht & Boat Company, of St. Louis, Mo. This bulletin is descriptive of the Saint Louis 40-foot modified V-bottom express cruiser, a boat with which the Saint Louis Company has taken especial pains, and the illustrations of this craft are of such quality that, in truth, it must have been no task at all to make the bulletin pleasing to the eye. The boat, which we hope to describe more in detail later, is what the Saint Louis people call a military type express cruiser, and is a one-man cruising yacht with accommodations for a party of six or eight.

Ferro Cleans Up In Southern Races

Three starts, three victories, three beautiful trophy cups—this is the record that Arthur Duvic, of New Orleans, made with his Ferro outboard motor during the past season. Mr. Duvic captured both the spring and fall outboard motor races in the Southern Yacht Club regatta and was the winner from a big field in the Pass Christian Country Club's regatta at Bayou Portage.

In the spring regatta Ferro outdistanced three other contestants, and in the fall regatta Ferro "fairly ran away from the rest of the field, as usual," to quote a New Orleans newspaper. Much interest was aroused by the fall race, as great preparations were made by Mr. Duvic's rivals to prevent him from making a season's clean-up. Ferro, however, with the advantage of a waterproof Bosch magneto and other features that make for speed, couldn't be headed.

New 14-20 H.P. Red Wing Thorobred

A 14-20 h.p. Red Wing Thorobred for 1916, to sell for $180, is the interesting announcement made recently by the Red Wing Motor Company, of Red Wing, Minn.

The new Thorobred is to be a long-stroke motor, having a bore of 3½ and stroke of 4½ inches. The cylinders are cast in pairs, L-head, and the crankcase will be either aluminum or gray iron at the option of the purchaser. The camshaft is a one-piece drop forging with cams integral and the crankshaft has a diameter of 1½ inches, which is large for a motor of this size. The timing gears are cut helical and the bearings are all die cast of the finest bearing metal. Large hand plates give easy accessibility to the crankcase and the exhaust manifold is water jacketed. The motor will also be furnished with reverse gear on cast extended base completely enclosed when desired.

The Red Wing Company has been experimenting and perfecting this motor for several months and has some of them in operation for testing purposes. The machine is now approved by the company's engineers and the first orders will be filled immediately. Large additions are to be made to the factory to enable the manufacturer to build the machine in large quantities, as is its custom, thus cutting down cost production to the minimum. An extra investment of $10,000 for new automatic machines and other equipment is said to have been made to take care of this one size alone. The company plans to make 1916 the biggest year in its history and is now preparing a handsome new catalog describing the entire Thorobred line. It is expected that the new machine will be used extensively in small runabouts and boats where limited power is wanted.

Valuable Acquisitions by the Saint Louis Co.

Reed H. Hubbell, a graduate of Cornell University, well known in motor boat circles, has recently joined the staff of the Saint Louis Yacht and Boat Co., of St. Louis, Mo., as sales manager. For the past year Mr. Hubbell has served as sales manager of the Milwaukee Yacht and Boat Co., and previously to that was similarly connected with the Niagara Boat Co. Announcement is also made of the appointment as superintendent of the Alton plant of the Saint Louis Yacht and Boat Co. of W. W. Sherman, who has had thirty years' experience in the construction of boats.

George D. Knox with Scripps

George D. Knox, 344 Pearl street, Hartford, Conn., has lately been appointed agent for the Connecticut River territory for Scripps motors, manufactured by the Scripps Motor Co., of Detroit, Mich.

Mr. Knox is Connecticut River agent for the Hudson and the Peerless cars, and has a well equipped service station for the repair of marine motors as well as cars.

Baby Rambler, a Smith Runabout

That Chris. Smith, of the C. C. Smith Boat & Engine Co., Algonac, Mich., does not confine his activities entirely to turning out racing hydroplanes is attested by the accompanying illustrations of the express runabout Baby Rambler, built by him for Commodore Chas. E. Greening, of Monroe, Mich., and Miami, Fla. Contributory to the high speed of 35 miles per hour attained by this runabout is the six-cylinder Model E-6 Van Blerck motor with

A moment of tense excitement—launching a big yacht at William Cramp & Sons, Philadelphia

which it is powered. Baby Rambler has already been driven a matter of 2,000 miles, and it is stated that the power plant has not even had a wrench put to it, despite the fact that it turns at 1,400 r.p.m. right along. Baby Rambler is stated to be dry, safe and easily controlled, and during the race meet at Put-in-Bay this summer she is declared to have been the center of interest through her ability to go and to stand up against bad weather and bad water at high speeds.

Aloha Oe, 31-Footer

One of the many attractive cruisers turned out this season by the Saint Louis Yacht & Boat Co., of St. Louis, Mo., is shown in an illustration on this page, with her owner and a crowd of admiring friends grouped around her. Aloha Oe is 31 feet long by a beam of 8 feet 3 inches, and her draft is 2 feet. The interior is divided into two separate cabins with sleeping accommodations for six persons. A well-arranged galley and a lavatory are also contained in the cabin. The cockpit is particularly attractive and commodious. This new boat is owned by William Musser, of Iowa City, Ia., and he selected for the power plant a 20-35 h.p. Sterling motor, a compact little outfit of four cylinders, equipped with electric lighting and starting system. This boat, which has been in use on Leech Lake, Minn., has a speed of 11 m.p.h., and, all in all, is a most attractive outfit.

A Motor-Driven Catamaran

An inexpensive way of putting new life into water sport has been found by Van D. Liggett, of Tyler, Tex. The novel craft Mr. Liggett built consists of two galvanized air drums 12 feet long and 15 inches in diameter, held together by three braced beams. Power is supplied by two Ferro rowboat motors which drive the outfit at nine miles an hour. Mr. Liggett says he's had great sport with his contrivance during the summer just past. Much of this was in riding rough water. The craft also proved just the thing for deep water bathing.

Steel catamaran built by Van D. Liggett, of Tyler, Tex., powered with two Ferro outboard motors and used in riding rough water

New Speedway Motor Announced

The Gas Engine and Power Co., and Chas. L. Seabury & Co., Cons., of Morris Heights, N. Y., are putting on the market a new model high-speed motor for use in runabouts and express cruisers, introducing the latest and best features in marine engine design. This motor is of six cylinders, 5¾-inch bore by 7-inch stroke, develops 125 b.h.p. at 1,200 r.p.m., and weighs 1,800 pounds. The cylinders are cast in pairs of the L type with integral heads, and the motor is of the enclosed type.

Boat Show at Palace

The 12th annual Motor Boat Show will be held at the Grand Central Palace, Jan. 29 -Feb. 6. This will be the first time that the big event has been staged at the Palace.

The 1916 Aristocrat

Although it is stated that distinct success has been attained with the 1915 model Small Aristocrat, the Herrmann Co. having sold motors to the United States Government and prominent private purchasers, the 1916 model will be featured by several noteworthy improvements. Among these are a high-tension magneto, a special new water pump, provision for self-starter installation and an increased bore of 2⅝ inches, giving a maximum of 12 h.p.

Aloha Oe, a 31-foot Saint Louis cruiser, owned by W. Musser, of Iowa City, Ia., and powered with a Sterling motor

Baby Rambler, a Chris Smith creation which, powered with a Van Blerck motor, does its 35 miles per hour right along. Commodore Greening, of Monroe, Mich., is the happy owner

Cape Cod Canal Improved In Many Ways

The Cape Cod Canal, which is now open day and night, is navigable for vessels drawing up to 20 feet—although this may not be of much interest to your motor boatman with his average three feet draft. What should interest him, however, is that many additional safeguards for navigation have been added within the past summer, among them being dolphins placed at all essential points, mooring stations on each side of the channel at the bridge approaches, additional quick-acting electric devices for the operation of the bridges, a powerful government light on the breakwater, a large off-shore gas and bell buoy two and a half miles from the breakwater in Cape Cod Bay, etc., etc. This and other information is contained in a bulletin recently issued by the Boston, Cape Cod & New York Canal Co., having offices at 43 Produce Exchange, New York City.

New Kermath Announced

The Kermath Manufacturing Co., of Detroit, Mich., makes announcement of a new 16 h.p. model for the 1916 season. The other models with which this company has had so much success—the 12 and the 20 h.p.—will be continued. This new motor, which, it is expected, will list at $210, will have a cylinder bore of 3¼ inches by a stroke of 4 inches, and the cylinders will be cast in pairs, as in the 12 h.p. model. Like its predecessors, also, this new model will have all drop-forged parts throughout, in the crankshaft, camshaft and connecting rods. The motor will be along the same general design as the present line of motors, high efficiency from the standpoints of power developed and economical operation being aimed at by the manufacturers. The Kermath Company states that it expects to build not less than 400 of this model for the coming season.

Van Blerck Enjoys Eminently Successful Year

Despite the fact that this has been considered an "off" year, the Van Blerck Motor Co., of Monroe, Mich., it is declared, has enjoyed the greatest success of its history. The total sales of marine and commercial engines put out by this company has reached almost twice the amount that it did last year. In making this announcement the Van Blerck Company is careful to state that this does not take into account the war orders it is filling, as these are not considered a part of the concern's regular business. To make matters better, the genial sales manager of the Van Blerck Company, Rex Wadman, announces that the advance business the Van Blerck Company now has booked makes him think of spring—not as a poet thinks of the vernal season, but as the hard headed business man does when the motor boat germ is circulating through the country, causing boat owners to install new power for the season. Rex didn't say it in these words exactly, but we think it's what he means. Anyway, business is good, and we're glad to hear it.

New Member of Sterling Family

An agreement has just been consummated by Arthur J. Utz, sales manager of the Sterling Engine Co., of Buffalo, N. Y., between the Sterling Company and R. C. Price & Co., of Pittsburgh, Pa., for the handling by the latter firm of the Sterling line in the rich western Pennsylvania territory of which Pittsburgh is the hub. R. C. Price & Co. are builders of all kinds of motor boats and other small craft, and are splendidly equipped for handling the engines manufactured by the Sterling people. Their office and shop are located at the foot of Federal St., in the Smoky City.

Auxiliary Sailing Vessels

In view of the increased interest shown in auxiliary sailing vessels in this company, the Swedish Bolinder Co., with New York offices at 30 Church St., has published a bulletin giving a comparison of expenses and profits obtaining in vessels driven by sail power alone and auxiliary sailing vessels powered with Bolinders direct reversible marine oil engines. This comparison is based on the record of an auxiliary fitted with a 120 h.p. motor over a period of 100 days. It appears that during this time the motor was run for 700 hours at a fuel consumption of .404 pounds of fuel per horsepower hour. An interesting feature of this test is that the vessel's speed was maintained at 8 knots, sail power alone being used when conditions warranted it, and the engine being run at all times when the strength

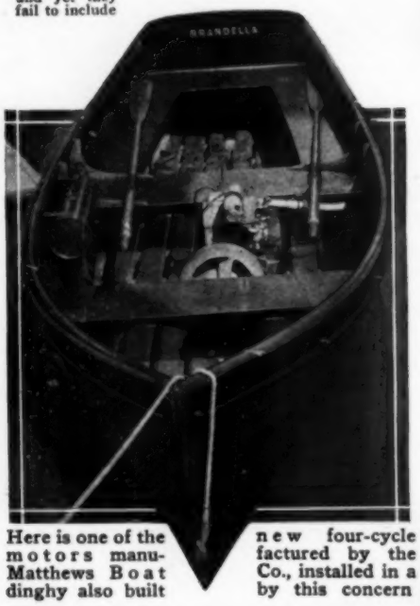
Webstone, a heavily constructed ice-breaking tug used on the Mississippi. She is 40 feet 9 inches long by 10 feet beam, and was built by the Saint Louis Yacht & Boat Co. The Mississippi River Power Co., of Keoka, Ia., owns her and she is powered with a Sterling heavy-duty motor

of the wind was insufficient to maintain its speed.

The Bolinders company figures out that with this vessel having a total cargo capacity of 370 tons, and with the prevailing freight rate at $2 a ton, and the vessel's run being 550 miles, the gross profit is $1.35 per mile. From this must be extracted expenses at the rate of $20 a day for the running expenses of the vessel and $8.50 per day for the motor, including fuel, lubricant and engineer's wages. Without going too greatly into details, it appears that with the ship at sea 200 days of the year and in cargo all but fifty days of this period, the gross surplus amounts to $24,600, after all expenses, including interest and depreciation of the engine, have been deducted.

Contrasted with this is the earning capacity of a sailing vessel without power but of the same cargo capacity. While the expenses are less, it appears that this vessel is earning money for its owners only 110 days out of the year, while its daily mileage is only 96 nautical miles as compared with 172 for the motor vessel. The gross surplus, we learn from the bulletin, is therefore only $6,950 per year, leaving a net surplus in favor of the auxiliary fitted sailing vessel amounting to $17,650.

These figures show all to the advantage of the auxiliary vessel, and yet they fail to include the solid satisfaction accruing to the skipper of the boat from the knowledge that no matter what the weather conditions, the motor will bring the vessel safely to port.



Here is one of the new four-cycle motors manufactured by the Matthews Boat Co., installed in a dinghy also built by this concern

Canadian Price of Kermath Reduced

We are informed that there will a reduction in price of $20 on the Kermath Canadian 20 Unit Power Plant for 1916. The complete unit power plant with reverse gear, rear starter, etc., as listed for 1915 at $395, will be reduced to $375, owing to the increase of production for the new season. This outfit includes enclosed oil-tight rear starter, Kingston dual type magneto, Kingston carbureter, water pump, oil pump, wiring, spark plugs, and all couplings and thrust bearings.

New Scripps Catalogue

One of the most attractive catalogues we have seen in some time comes to us from the Scripps Motor Co., of Detroit, Mich. This booklet, which is of handy size to stow on the pin rail along with the pipe and baccy, tells in the clearest way, both in picture and in text, all about the Scripps "Dream Motor," the two, four and six-cylinder motor now manufactured in light and heavy types by this concern. In addition to mere description some valuable tables and curves are given.

Van Blerck Literature

The Van Blerck Motor Co. keeps a steady stream of literature for insertion in loose leaf folders flowing from its factory at Monroe, Mich. These sheets take up every variety of subject pertaining to Van Blerck motors, from letters of recommendation to fuel consumption data and back again, and they are all extremely interesting and saveable.

Sterling Owner Comes Back for Another

When a boat owner comes back and buys another motor of the same make which he has been using it is a fairly reliable indication that he has received satisfaction from his first engine. This is what Bancroft C. Davis, of Auburndale, Mass., owner of the auxiliary yawl Mischief, shown in the accompanying illustration, has done. Mischief is a 58-footer, built in 1907 by Lawley after designs by B. B. Crowninshield, and for the last several years has been powered with a 6½x 8-inch Sterling heavy-duty, which motor has performed consistently and, it is said, without even minor troubles. The boat is used along the New England coast, but Mr. Davis wanted another craft for use at his summer home at Cocoanut Grove, Fla., and so he has recently given orders for a 35-foot auxiliary ketch which is now building at Lawley's. This new boat will have a four-cylinder 5½x 8-inch Sterling as her power plant, and as soon as she is completed will cruise south to her home port, going down by the inside route.

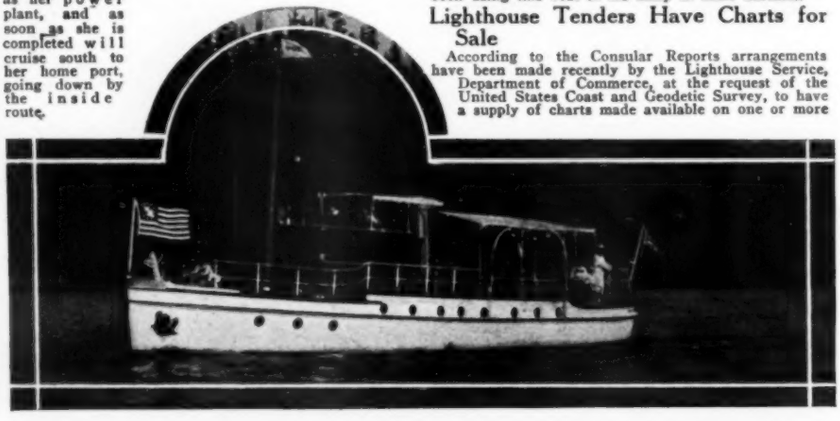
Mischief, an auxiliary yawl whose Sterling motor has given such satisfaction for the last three years that her owner is putting another motor of the same make in his new ketch now building at Lawley's

Niagara Motor Boat Co. Busy

The Niagara Motor Boat Co., of North Tonawanda, N. Y., announces that it has done the largest business in its history this year, and that during the season it has been obliged to build an addition to its plant which gives it 5,000 square feet more floor space than it has ever before had. Among the prominent people who have had boats built for them by this company are: Mrs. Whitelaw Reid, Mrs. Anson Phelps Stokes, W. S. Benson, vice-president of the Tide Water Oil Co., Ralph H. Sidway, treasurer of the Robertson-Cataract Co., of Buffalo, N. Y., James A. Stillman, vice-president of the National City Bank, of New York, and others. Mr. Stillman's boat, which is shown in the accompanying illustrations, is a 32 by 5½-foot runabout finished in mahogany, equipped with a four-cycle 30-45 h. p. Fay & Bowen engine, giving a speed of 19 miles per hour. The boat has an electric starter, electric lights, pedal reverse control and electric searchlight with control at the bulkhead. The engine compartment has a raised hatch with covers opening directly over the motor. Mr. Stillman has been using this boat at his camp at Lake Saranac.

Lighthouse Tenders Have Charts for Sale

According to the Consular Reports arrangements have been made recently by the Lighthouse Service, Department of Commerce, at the request of the United States Coast and Geodetic Survey, to have a supply of charts made available on one or more lighthouse tenders in each lighthouse district on the Atlantic, Gulf and Pacific coasts of the United States for sale to mariners and others who are desirous of purchasing charts within the waters in which the tenders are operated. The Coast and Geodetic Survey will furnish the charts and will renew all charts requiring correction at such intervals as may be considered proper.



Iphis is a 65-foot cruiser plowing British Columbia waters which is powered with a heavy-duty Buffalo engine. D. H. Bale of Victoria, B. C., is the owner

Federal Motor Co. Goes into Bankruptcy

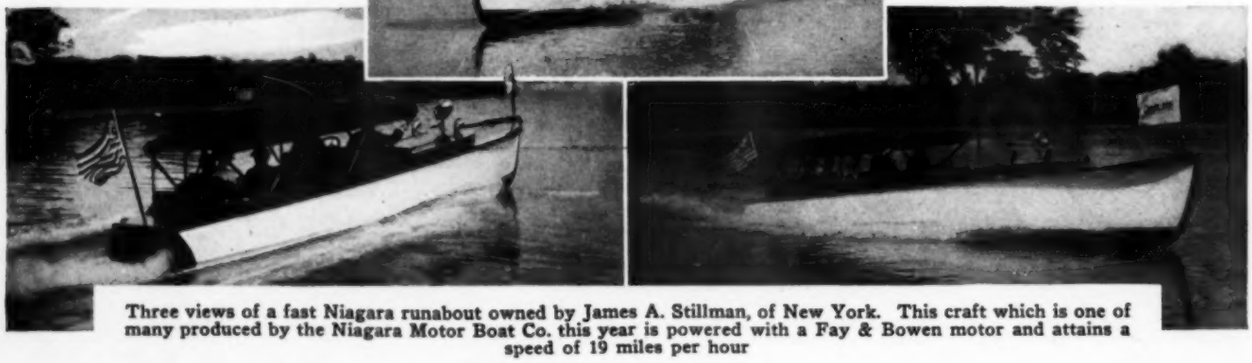
We are informed by R. B. Owen, Vice-president and treasurer of the Federal Motor & Mfg. Co., of Washington, D. C., that this concern, builder of outboard motors, has gone into bankruptcy. It is confidently believed that all the creditors will be paid in full and that there will be considerable left over when all settlements are made.

Gray Advance Catalogue

The 1916 advance catalogue of the Gray Motor Co., of Detroit, Mich., which has just been published, gives the detailed specifications of Gray two and four-cycle motors. Of the latter, the Model D is perhaps the most prominent at the present time, and a good deal of space is given to its description and illustration which is done in a most interesting way.

Durkee Addition

The Durkee folks have just put in a new power plant at their Grasmere, S. I., factory and connected the galvanizing plant with the main building by adding a 200-foot structure.



Three views of a fast Niagara runabout owned by James A. Stillman, of New York. This craft which is one of many produced by the Niagara Motor Boat Co. this year is powered with a Fay & Bowen motor and attains a speed of 19 miles per hour

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Naval Architects and Yacht Brokers.

COX & STEVENS

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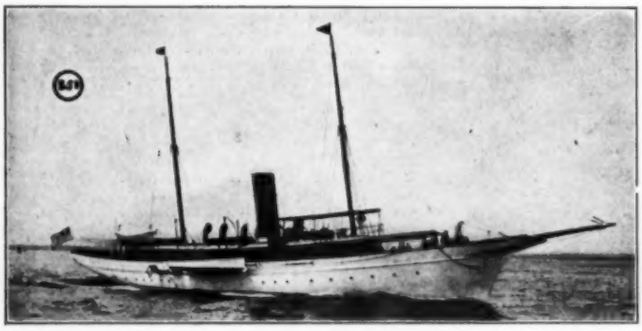
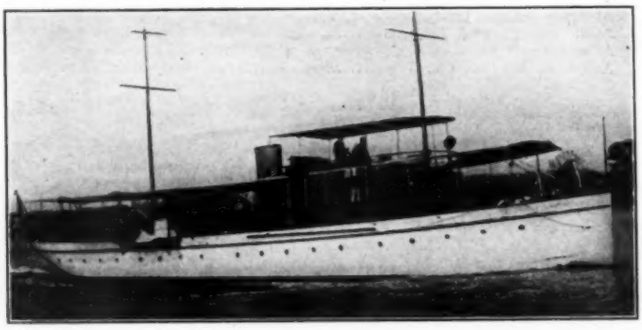
Cable—BROKERAGE.

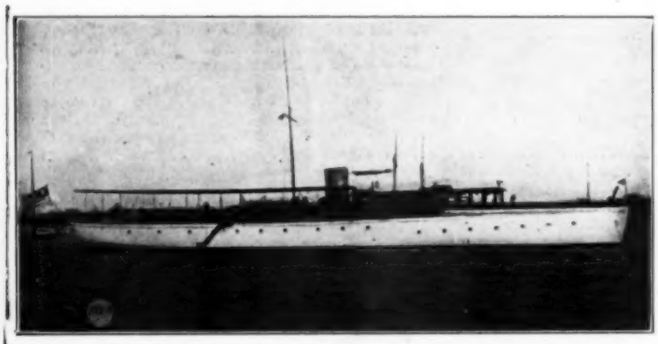
We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars furnished on request. Catalogue illustrating types and sizes of yachts we have for for sale will be mailed on application.



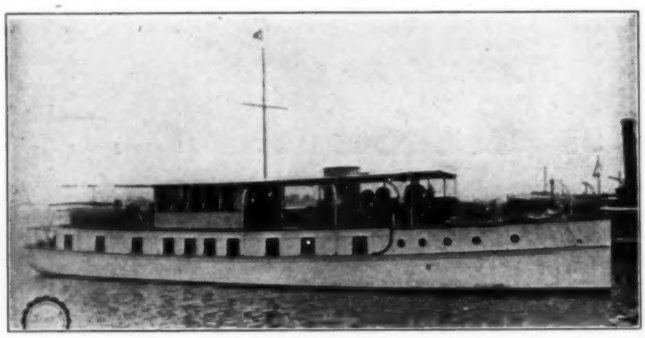
No. 85.—For Charter.—200 ft. steam yacht; speed 12 to 14 knots. Very able and roomy craft. Price attractive. Cox & Stevens, 15 William St., New York.



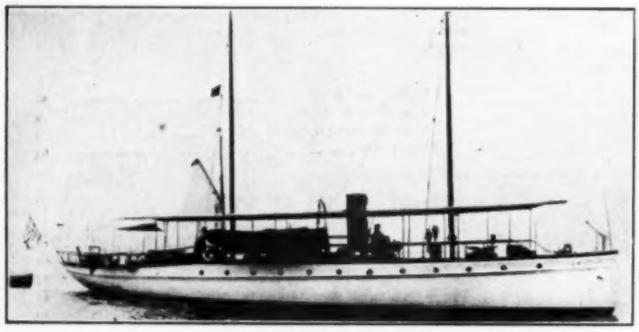
No. 1796.—For Sale or Charter.—Very roomy, twin-screw cruising power yacht; 99 x 17 x 4 ft. Recent build. Speed 13-15 miles; Standard motors. Large dining saloon, six staterooms, three bathrooms; all conveniences. Cox & Stevens, 15 William Street, New York.



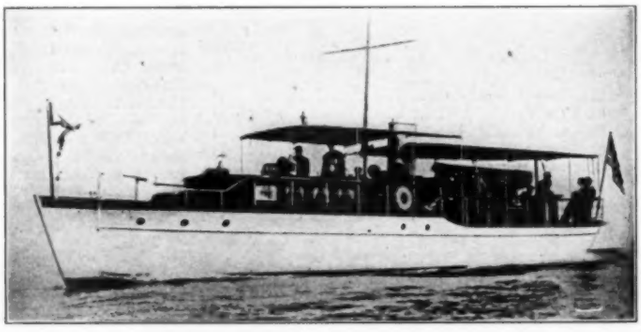
No. 885.—For Sale or Charter.—Handsome fast 120 ft. twin-screw, steel power yacht. Speed up to 18 miles. Large dining saloon on deck, three double staterooms, main saloon, two bathrooms, etc. Price attractive. Cox & Stevens, 15 William Street, New York.



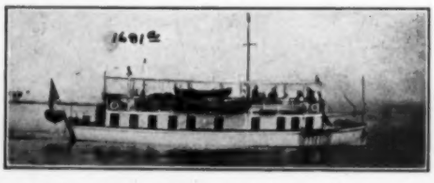
No. 2100.—For Sale or Charter.—Modern twin screw gasoline houseboat; 95 x 19 x 3.3 feet. Speed 13-14 miles; two 100 h.p. motors. Large social hall on deck. Dining saloon, four double staterooms, bath, etc. Very desirable craft. Cox & Stevens, 15 William St., New York.



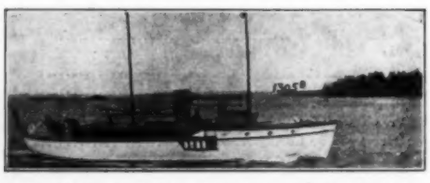
No. 1503.—For Sale or Charter—Flush deck gasoline cruiser, 85x15.5x4 ft.; very able craft; speed, 12 to 13 miles; Standard motor; excellent accommodations; price very low for immediate disposal. Cox & Stevens, 15 William Street, New York.



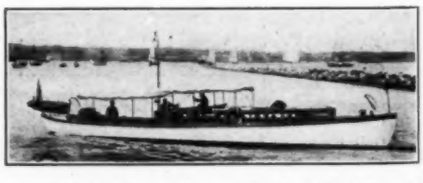
No. 1744.—For Sale.—Attractive twin screw gasoline cruiser; 67.6 x 13.6 x 4 ft. Highest grade construction by well-known firm. Speed 11-12 miles. Standard motors. Dining saloon and galley forward; two double staterooms and bath aft. Price low. Cox & Stevens, 15 William St., New York.



No. 1681.—Exceptionally desirable, twin-screw gasoline houseboat, 70x16.9x2.6 ft.; recent build; speed, 10 to 11 miles; Sterling motors; large saloon, three staterooms, bath; all conveniences; bargain for quick sale. Cox & Stevens, 15 William Street, New York.



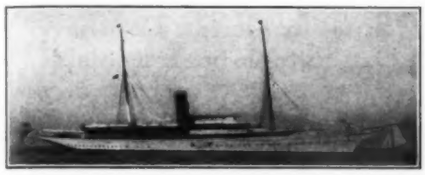
No. 1305.—For Sale.—Bridge deck cruiser; 50 x 10.9 x 3.6 ft. Speed 11-12 miles; 25-35 H.P. Standard motor. Double stateroom, saloon, etc. Handsomely finished in African mahogany. Price very low. Cox & Stevens, 15 William St., New York.



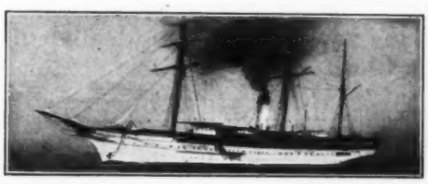
No. 2825—For Sale at Low Figure—Day cruiser, 60x 10.9x3.3 ft.; speed, 11¼ to 13 miles; 40 to 60 horsepower; 6-cylinder Standard motor; especially desirable boat for day service or tender to racing yacht; excellent condition. Cox & Stevens, 15 William Street, New York.

STANLEY M. SEAMAN, 220 BROADWAY, N. Y.

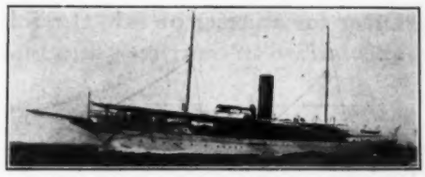
STEAM YACHTS



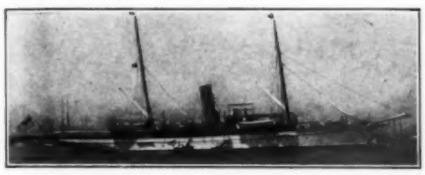
8014.—282-foot Steel Twin Screw Ocean Cruiser. Speed 15 knots. Luxuriously appointed.



6402.—Steel Twin Screw Ocean Going Cruiser. 11 staterooms and 9 baths. Cost over $500,000.

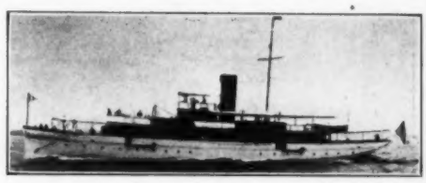


7032.—Steel Twin Screw Ocean Going Cruiser. English build. 8 large staterooms and 5 baths.

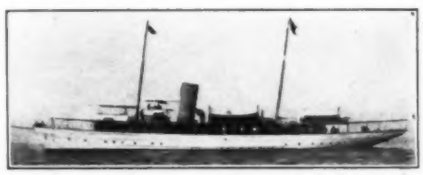


5414.—Steel American Built Ocean Cruiser. 10 staterooms and 4 baths. Offered by Estate.

7909.—185-foot Cruiser. 5 staterooms. 3 baths. Speed 17 knots.

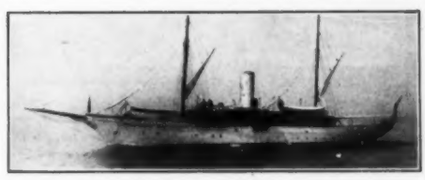


8164.—Steel Twin Screw Sea Cruiser. Moderate draught. Unusual accommodations. Speed 15 knots. Best finish and appointments.



7841.—172-foot Steel Seagoing Cruiser. 4 staterooms. Speed up to 17½ knots. All modern conveniences.

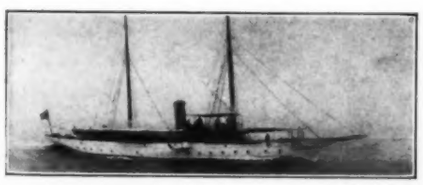
8047.—166-foot Twin Screw Express Cruiser. Tobin bronze hull. New Turbines 1913. Speed 30 miles. Cost $275,000.



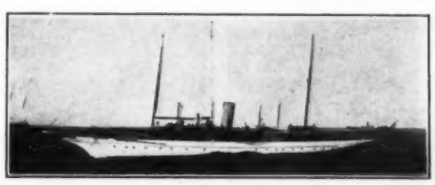
7860.—160-foot Steel Seagoing Cruiser. Fine accommodations. Speed 14 miles.

Detailed descriptions of above yachts on file; will be sent by request.

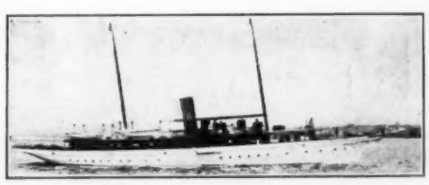
STANLEY M. SEAMAN, 220 BROADWAY, N. Y.



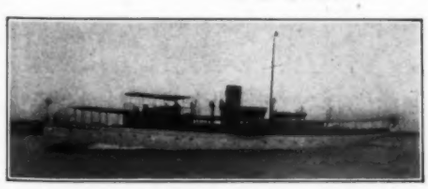
7056.—158-foot Steel Seagoing Cruiser. 4 staterooms. Speed 14 knots. All conveniences. Elegant condition.



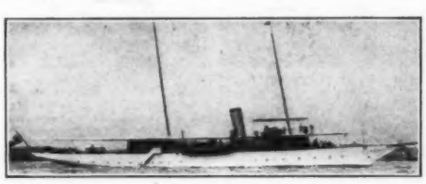
7840.—155-foot Twin Screw Steel Coast Cruiser. 5 staterooms. Speed 18 miles. Perfect condition.



7967.—152-foot Steel English Built Seagoing Cruiser 7 staterooms. Speed 12½ knots.

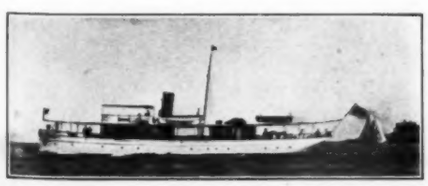


8165.—Modern Twin Screw 145-foot Coast Cruiser. 5 staterooms. Speed 17 miles. Economically maintained.

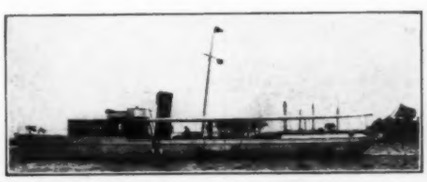


8013.—144-foot Steel Coast Cruiser. 6 staterooms. Speed 15 knots. Every convenience.

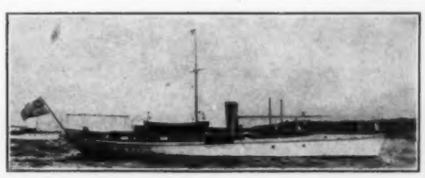
8046.—142-foot Twin Screw. 3 staterooms. Bath. Speed 20 miles. Offered by Estate.



8018.—Twin Screw Seagoing Cruiser, 112 x 19½ x 5½. 4 staterooms. 2 baths.



7481.—114-foot Lawley Cruiser. 2 staterooms. Bath. Triple engine. Speed 12 knots. Steam heat.



7826.—100-foot Cruiser. 3 staterooms. Very able boat.

Detailed descriptions of above yachts on file; will be sent by request.

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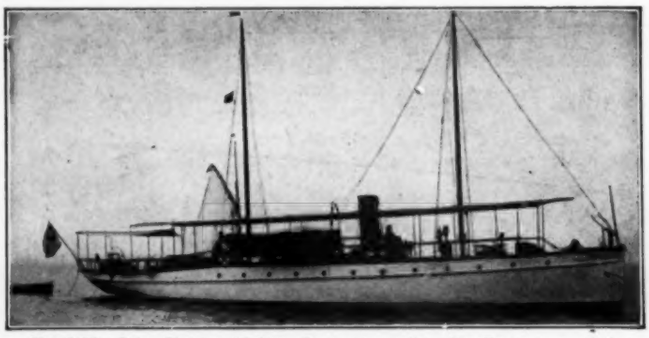
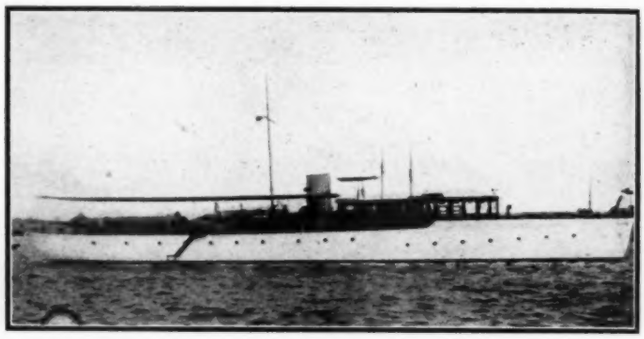
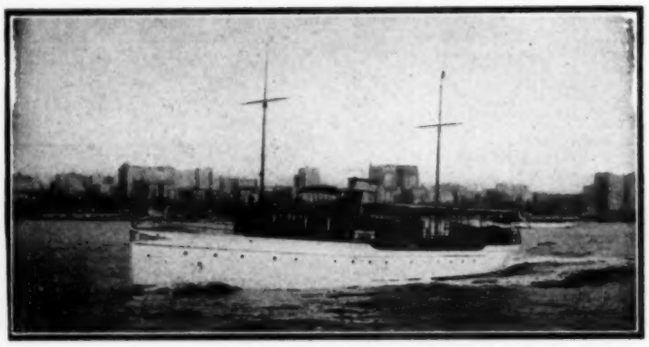


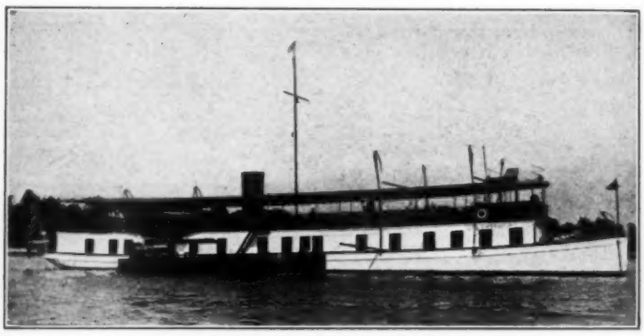
No. 8178.—Sale—Charter—85 ft. modern motor yacht. Excellent accommodations. Standard motor, speed 12 miles. Electric lighted. Large deck space.



No. 7999.—Sale—Charter—118 ft. fast twin-screw gasoline cruiser; three double staterooms, main saloon, dining saloon; two bathrooms.

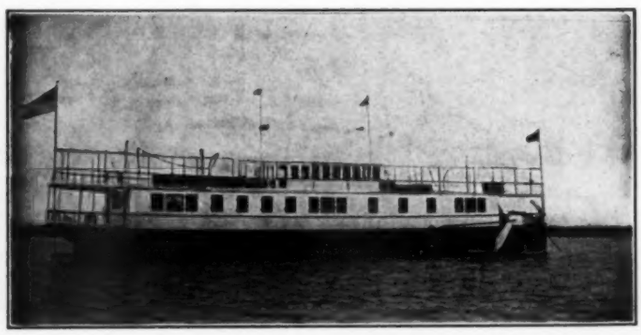


No. 7058.—Sale—Charter—98-foot twin-screw cruiser; 2-125 H.P. Standard motors, speed 15 miles. Four staterooms, dining saloon, two bathrooms, four W. Ca. Electric lighted.

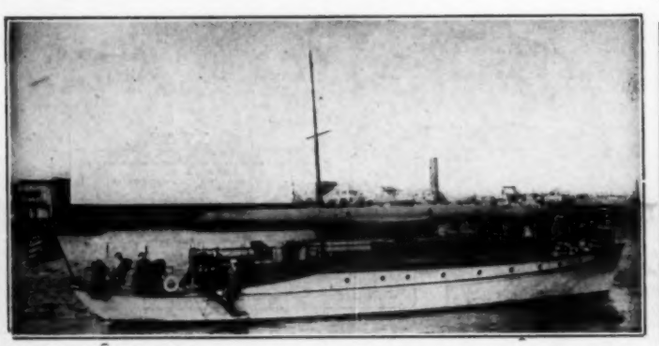


No. 1808.—For Charter—Desirable twin-screw houseboat, 123 ft. by 17 ft. 8 in. by 3 ft. 4 in. draft; four staterooms, two bathrooms, large saloon, electric light plant, ice machine, etc.

No. 243.—Sale—Charter—Steam houseboat, 116 ft. by 21 ft. by 4 ft. draft; four staterooms, four bathrooms, dining and music rooms.



No. 1805.—Sale—Charter—Now in Florida waters; 125 ft. by 23 ft. 4 in. by 3 ft. 6 in. draft; eight large staterooms, three bathrooms, dining saloon, observatory and main saloon. In excellent condition.



No. 7674.—Sale—Charter—Twin-screw gasoline cruiser, 75 ft. by 17 ft. 6 inch beam. One double and one single stateroom, bathroom, large saloon, 20th Century motors.

No. 1860.—For Charter—Houseboat, 70 ft. by 18 ft. 6 in. by 18 in. draft; three staterooms, two bathrooms, dining saloon and deck house.

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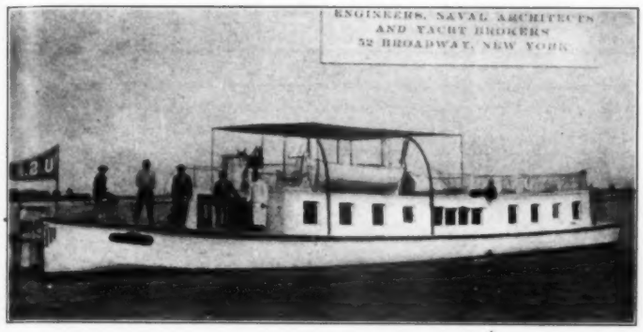
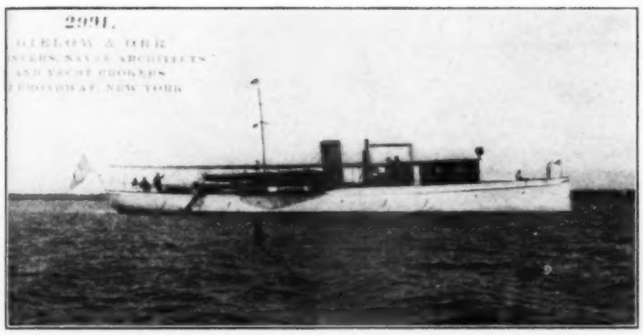
Our long experience as architects and engineers lends an added value to our brokerage service, in expert appraisal and advice, estimates and supervision on alteration, etc.

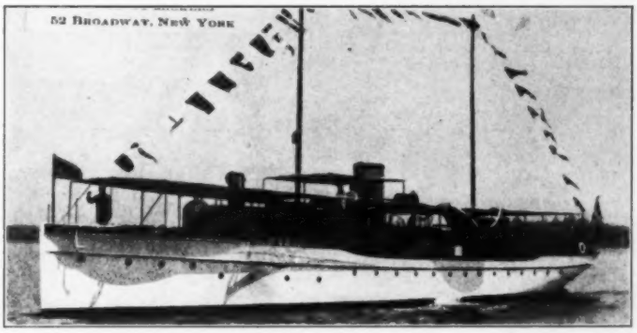


No. 3987.—Sale or Charter—Power houseboat, 85 by 18 by 2.6 draft. Specially designed for shoal water cruising in Florida. Standard engine.

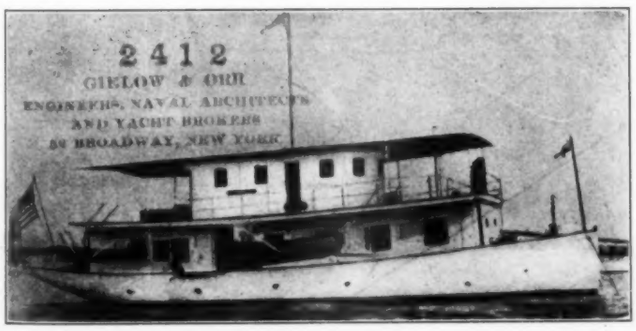
No. 5177.—For Sale—Matthews bridge deck cruiser, 45 by 11.3 by 3 feet draft. Built 1914. Standard engine. Electric lights. Two staterooms.



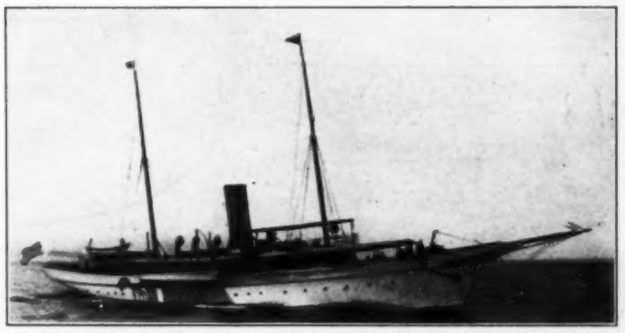
No. 2991.—For Sale—112-foot twin-screw motor yacht. Lawley design and construction. In excellent condition throughout. One of the best power yachts available.



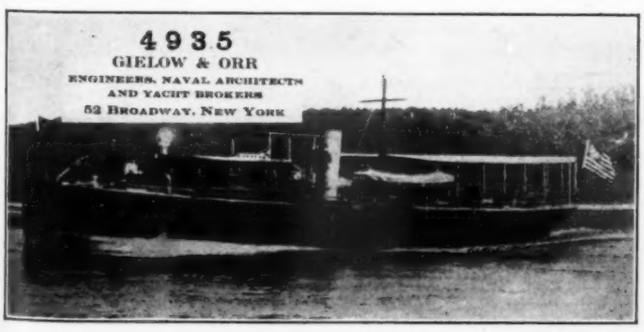
No. 4717.—For Sale—High-class, 98-foot twin-screw motor yacht. In commission; speed, 16 miles. Excellent accommodations. Well appointed. First class throughout. Like new; low price.



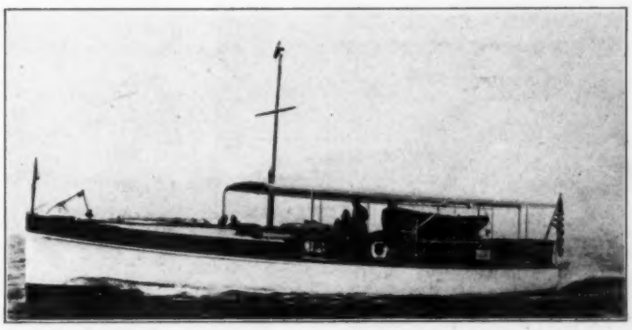
No. 2412.—Sale or Charter—Twin-screw houseboat, 68 by 23 by 4. One of the roomiest boats of size available. Must be seen to be appreciated; low price.



No. 4.—Sale or Charter—187-foot single-screw steam yacht. Speed up to 15 miles. Fine seaboat. Excellent accommodations. Will be sold at low price or exchange for smaller steam or motor yacht.



No. 4935.—Attractive price; unusually well constructed; 80-foot twin-screw motor yacht; three staterooms, extra large, deck dining saloon; teak decks and outside joiner work; handsomely finished below; everything A-1.



No. 5054.—For Sale—Unusually fine 50-foot bridge deck cruiser; 1914 Sterling engine; speed, 14 miles.

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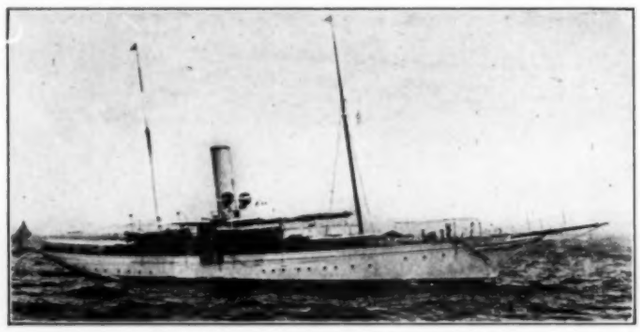
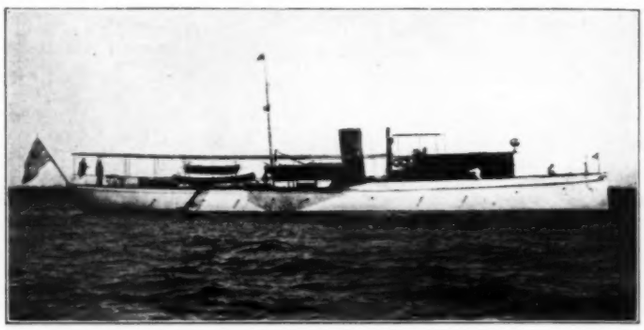
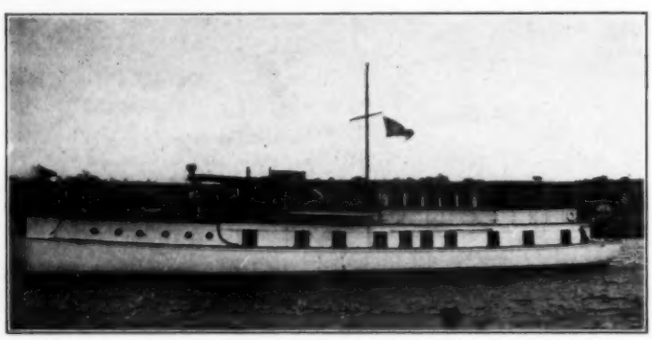


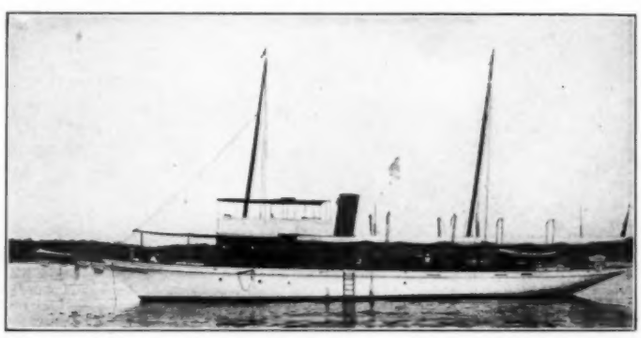
No. 246.—Sale—Charter—Ocean going, 200 ft. Steam Yacht. Comfortable accommodations. Classed 100-A-1 Lloyds.



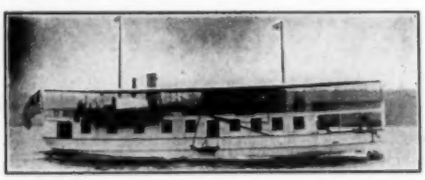
No. 1388.—Best all round motor yacht available, 112 ft. Flush deck, two first-class motors, five staterooms, etc. A-1 condition.



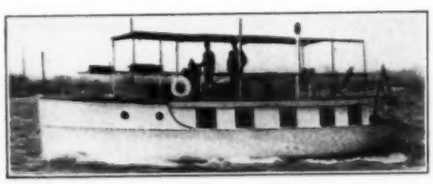
No. 1872.—For Florida charter.—High-class 95 ft. twin screw semi-houseboat; unusual accommodations.



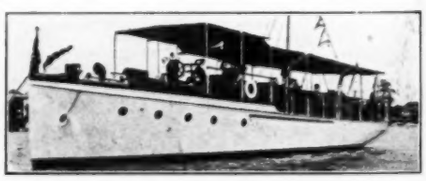
No. 1259.—Power Cruiser, Diesel type motor, 98 x 16, flush deck. Inspection and trial invited.



No. 441.—Twin Screw power houseboat, 85 x 23.6, motors of good make and horsepower.



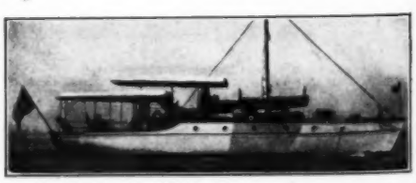
No. 61.—Power Houseboat, 43 x 12.10 x 3, built 1914; Standard motor.



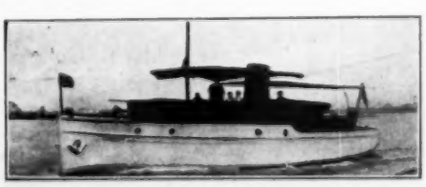
No. 1880.—Able cruiser, 60x12; built 1913; fifty h.p. motor; bridge controls.

No. 2072.—Bridge Deck Cruiser, 60 x 12.6, light draught. Twentieth Century motor. In commission.

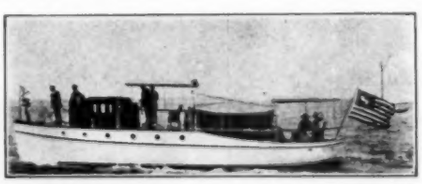
No. 2126—Fast Cruiser 47 ft. long, six cylinder Van Blerck motor, speed 16-18 miles.



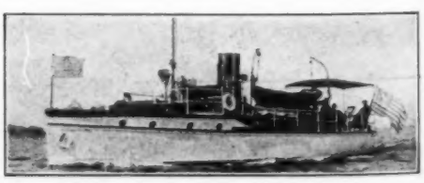
No. 1270.—Raised deck cruiser, 55 x 12; Standard motor. Two staterooms, etc.



No. 1883.—Bridge Deck Cruiser, 60 x 15; two Sterling motors. Now Southern waters.



No. 1996.—Raised Deck Cruiser, with deck house, 45.6 x 11; 20th Century motor.



No. 2075.—For Sale.—Bargain figure, 50 x 10.6, power cruiser, similar design famous Bermuda racer, 4 cylinder motor, etc. In Commission.

HENRY H. JENNINGS HERMAN JAGLE

Jennings Yacht Brokerage Company

AMERICAN AND FOREIGN YACHTS

Telephone Rector 8545

Cable Address Yachtbroco, Newyork

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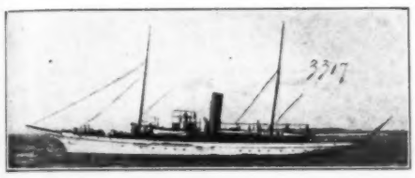
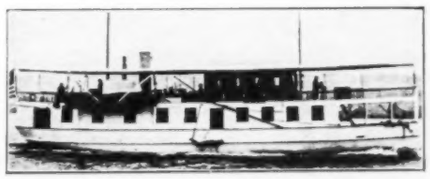
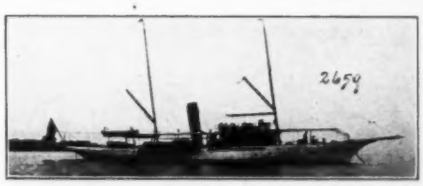


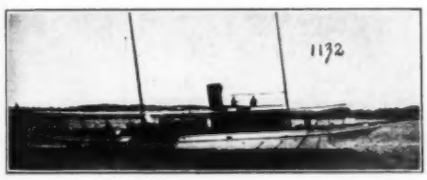
No. 3317.—200-foot ocean-going steam yacht; ten large staterooms, saloon, four baths, etc.; low figure.



No. 3843.—Twin-screw seagoing houseboat, 85 foot long; three large staterooms, two baths, large dining saloon; music room; speed, 10 miles; price low.

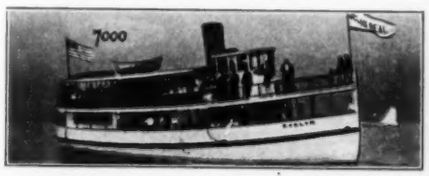


No. 2659.—125-foot steam yacht; three double, one single stateroom, bath, saloon, dining saloon; an exceptional bargain; act quickly.

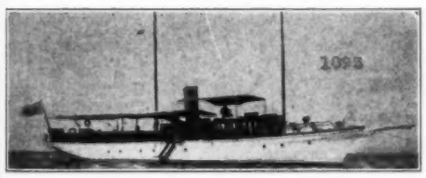


No. 1132.—110-foot steam yacht; two double, one single stateroom, large saloon, dining saloon, three toilets; speed, 14 miles; low figure.

No. 1284.—High-class twin-screw cruising power yacht; 98x16x4 feet; four staterooms, dining saloon etc.; speed, 14 to 16 miles.

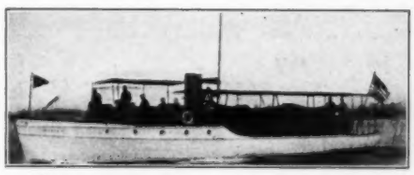


No. 7000.—Sale or charter; twin-screw passenger boat, 80x20x4 feet; equipped with two 45 H.P. kerosene oil engines; speed, 11 miles; fully equipped; can carry from 300 to 400 people.

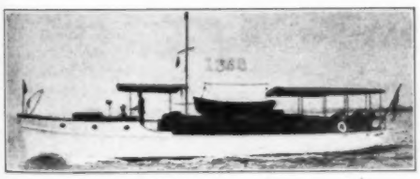


No. 1093.—90-foot twin-screw cruiser; three staterooms, saloon, bathroom, etc.; speed, 11 miles; splendid boat for Florida waters.

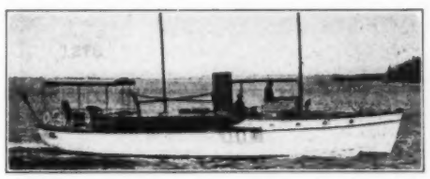
No. 1542.—56-foot high-speed cruiser; practically new; stateroom, saloon, three toilets; speed, 22 miles.



No. 1148.—70-foot twin-screw cruiser; two staterooms, saloon, etc.; speed, 12 miles; an excellent opportunity to purchase at a low figure.

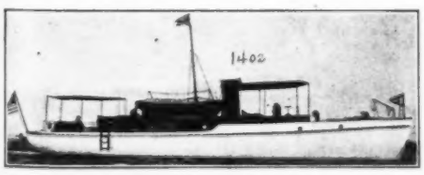


No. 1328.—60-foot cruiser; best of construction; stateroom, saloon, etc.; speed 12 miles; ideal for Southern cruising.

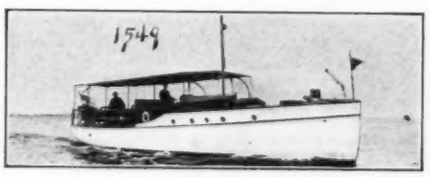


No. 1278.—50-foot cruiser; two staterooms, saloon, two toilets; Standard motor; splendid proposition for high-class cruiser at low figure.

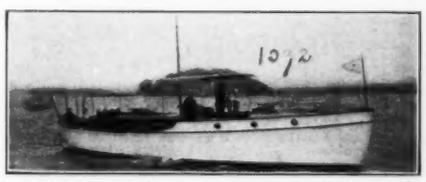
No. 906.—50-foot cruiser. Staterooms, saloon, etc., speed 11 miles, bargain.



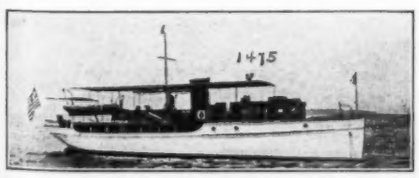
No. 1402.—50-foot cruiser. Staterooms, saloon, etc. Speed 12 miles.



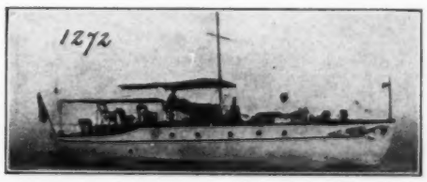
No. 1549.—55-foot twin screw cruiser. Staterooms, saloon, etc. Speed 12 miles.



No. 1032.—55-foot cruiser. Large saloon, bathroom, etc. Speed 12 miles.



No. 1475.—60-foot Florida cruiser. Two staterooms, saloon, dining saloon. 10 miles.

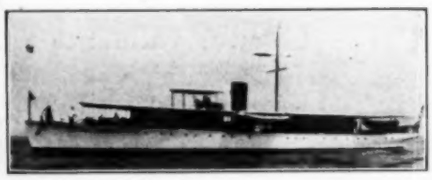


No. 1272.—60-foot cruiser. Two staterooms, saloon, etc. Speed 11 miles.

No. 1605.—40-foot cruiser. Comfortable and splendid seaboat. Sleeps four people. Speed 12 miles.

STANLEY M. SEAMAN, 220 BROADWAY, N. Y.

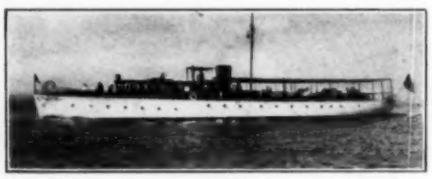
GASOLENE YACHTS



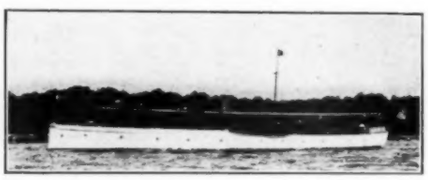
No. 8078. 140-foot Twin Screw. 5 staterooms and 2 baths. Speed 18 miles.

No. 7652.—130-foot Lawley Twin Screw. 3 staterooms. 2 baths. Speed 14½ knots. Every convenience.

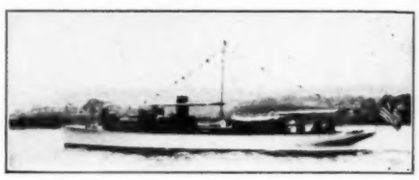
No. 6080.—(New deck house not shown).—120-foot Twin Screw Express Cruiser. Speed 20 miles. 2 staterooms. 2 baths.



No. 6828.—118-foot Steel Twin Screw Express Cruiser. 3 staterooms. 2 baths. Speed 16 miles. Cost $60,000.



No. 7983.—113-foot Lawley Twin Screw. 5 staterooms. Speed 14 knots. Perfect condition.



No. 7988.—111-foot Seabury Triple Screw. 2 staterooms. Speed 26 miles.

No. 7482.—110-foot Steel Twin Screw Seagoing Cruiser. 6 staterooms. 2 baths. Speed 14 knots.

No. 7996.—106-foot Single Screw Coast Cruiser. 4 staterooms. 300 h.p. Standard motor. Speed 15 miles.

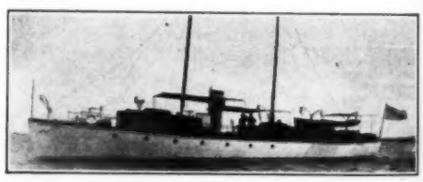
No. 8001.—105-foot Twin Screw. 4 staterooms. 2 baths. Standard motors. Speed 21 miles.

Detailed descriptions of above yachts on file; will be sent by request.

STANLEY M. SEAMAN, 220 BROADWAY, N. Y.

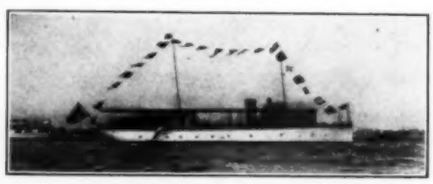
No. 7982.—100-foot. 4½ feet draught. Launched 1913.

No. 6940.—99-foot Twin Screw. 3 staterooms. Speed 18½ miles.

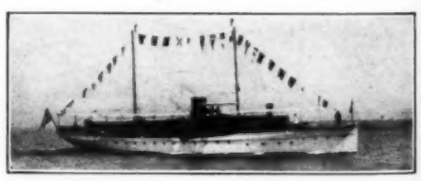


No. 6502.—99-foot Steel Twin Screw. Standard motors. Speed 13 miles. Every convenience.

No. 7404.—99-foot Twin Screw Seagoing Cruiser. 5 staterooms and 3 baths. Speed 13½ miles. Cost $60,000. Every convenience.



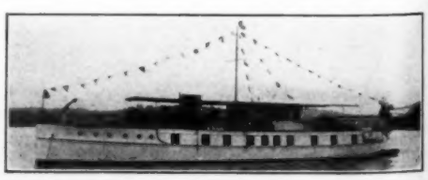
No. 7921.—98-foot Twin Screw Elco Cruiser. 3 staterooms. 2 baths. Best of everything.



No. 8022.—98-foot Twin Screw Matthews Cruiser. Speed 14 miles. Every modern convenience.

No. 7094.—98-foot Twin Screw Seagoing Cruiser. 4 staterooms. 2 baths. Exceptionally well built. Speed 14 knots.

No. 7775.—97-foot Twin Screw Seagoing Cruiser. 4 feet draught. 4 staterooms. 2 baths. Standard motors.

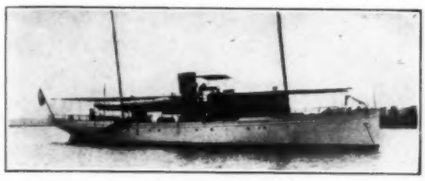


No. 7744.—95-foot Twin Screw Ideal American Cruiser. 3 ft. 3 in. draught. 4 staterooms. 2 baths. Speed 14 miles. Hot water heat. Perfect condition.

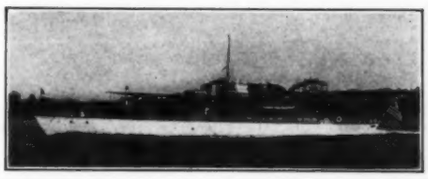
Detailed descriptions of above yachts on file; will be sent by request.

STANLEY M. SEAMAN, 220 BROADWAY, N. Y.

GASOLENE YACHTS

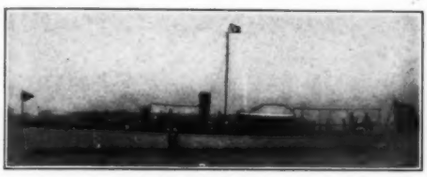


7920.—94-foot Seagoing Cruiser. 300 h.p. Standard motor. Every convenience; 4 staterooms.

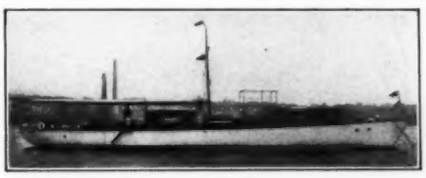


7382.—91-foot Twin Screw Express Cruiser. 3 staterooms. Speed 14 knots.

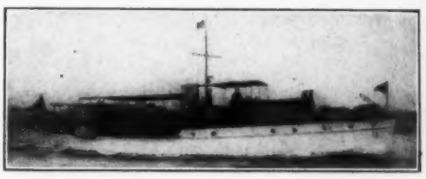
6027.—90-foot Lawley Seagoing Cruiser. 3 staterooms. 2 baths. Speed 14 miles.



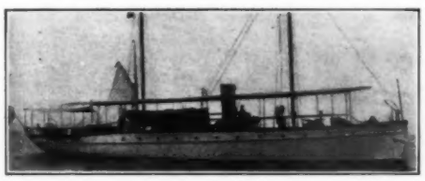
7170.—90-foot. 2 staterooms. 300 h.p. Standard motor. Speed 20 miles.



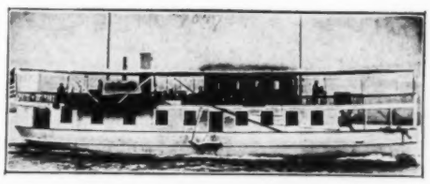
7427.—87-foot Lawley Twin Screw Cruiser. 2 staterooms. Speed 16 miles.



8178.—85-foot Twin Screw. Built 1914. Fine sea boat. Fine accommodations.



6735.—85-foot Shoal Draught Cruiser. 3 staterooms. Bath. Standard motor. Offer solicited.



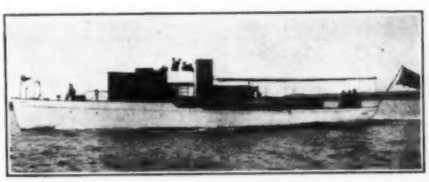
7409.—85-foot Twin Screw Shoal Draught Cruiser. 3 staterooms. 2 baths. Speed 12 miles.

8150.—84-foot Twin Screw Cruiser. Launched 1914. 2 staterooms. Speed 12 miles.

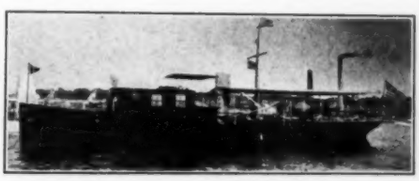
Detailed descriptions of above yachts on file; will be sent by request.

STANLEY M. SEAMAN, 220 BROADWAY, N. Y.

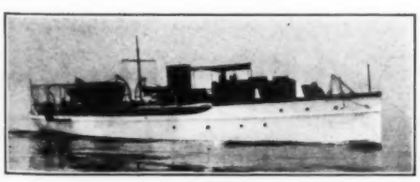
8124.—83-foot Lawley Cruiser. 2 staterooms. Bath. Finest of everything.



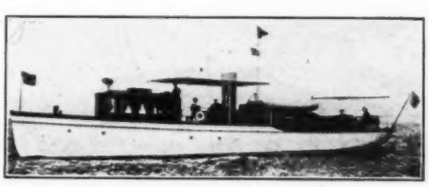
7515.—81-foot Lawley Fast Cruiser. 2 staterooms. Bath. 100 h.p. Standard. Speed 13 miles.



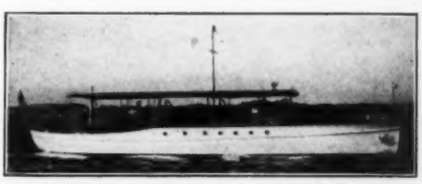
7989.—80-foot Twin Screw Seagoing Cruiser. 3 staterooms. Unusually heavily constructed. Cost $40,000.



8105.—80-foot Twin Screw. Launched 1915. Beautifully constructed. Cost $25,000.



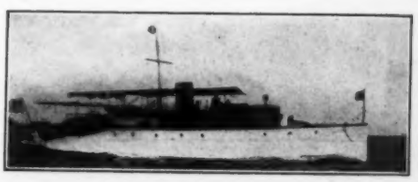
8156.—78-foot Twin Screw Elco Cruiser. 3¼ ft. draught. 3 staterooms. Bath. Speed 13 miles.



7978.—78-foot Twin Screw Shoal Draught Cruiser. 3 staterooms. Bath. Unusual construction.

7820.—75-foot Twin Screw Coast Cruiser. 3 staterooms. All conveniences.

7940.—72-foot. Launched 1914. 2 staterooms. Bath. Sterling engine. Elegant appointments.

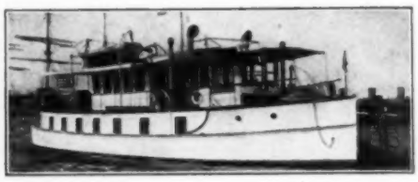


8103.—71-foot Twin Screw. Built by Luders 1912. 2 staterooms. Bath. Speed 13 miles.

Detailed descriptions of above yachts on file; will be sent by request.

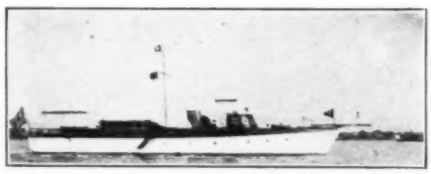
STANLEY M. SEAMAN, 220 BROADWAY, N. Y.

GASOLENE YACHTS



7754.—68-foot Twin Screw. 2 ft. 10 in. draught. Launched 1913. 2 staterooms. Hot water heat. Ideal craft for year round cruising.

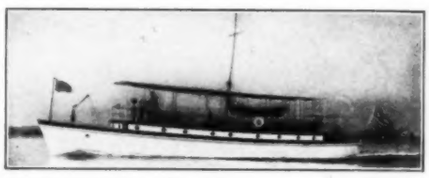
7532.—68-foot Twin Screw Lawley Cruiser. 2 staterooms. Bath. Beautiful condition.



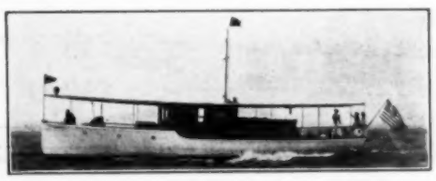
7847.—70-foot Cruiser. Stateroom. Saloon. Berths 6. Speed 13 miles. Fine condition. Low price.

7914.—66-foot Matthews Cruiser. Finest of construction, workmanship, finish and equipment.

8101.—65-foot Cruiser. Launched 1915. 2 staterooms. Bath. All conveniences.

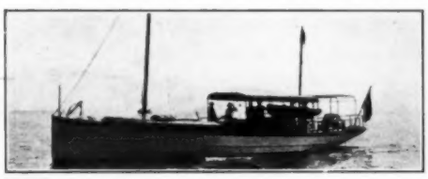


8025.—65-foot Cruiser. 2 staterooms. Bath. 100 h.p. Standard motor. Speed 13 miles. Low price.



7165.—64-foot Herreshoff Cruiser. 3 staterooms. Sterling motor. Economically maintained.

8084.—64-foot Lawley Cruiser. 3½-foot draught. 4 staterooms. Standard motor. Electric lights. Cruised entire Atlantic Coast. Low price.

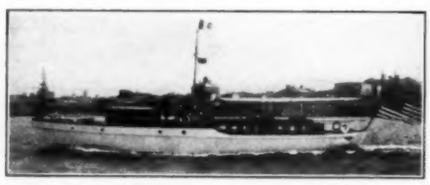


7630.—61-foot Auxiliary Cruiser. Launched 1913. 3 feet draught. Able sea boat.

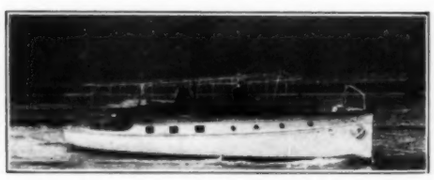
Detailed descriptions of above yachts on file; will be sent by request.

STANLEY M. SEAMAN, 220 BROADWAY, N. Y.

7618.—60-foot. Best workmanship and finish. Speed 13 miles. Beautiful condition.

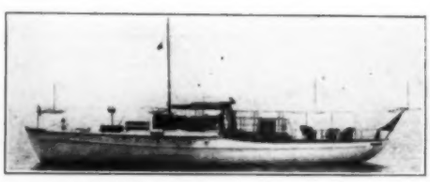


6916.—60-foot. 2 staterooms. Economically maintained.

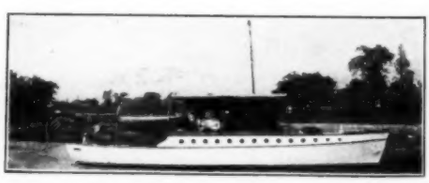


7768.—(Deck house added 1914)—Ideal Twin Screw. 3 staterooms. Bath. Hot water heat. Only boat of type available.

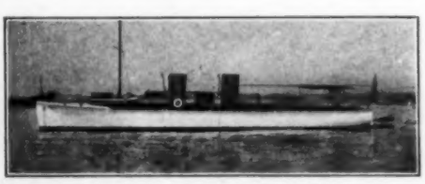
7830.—60-foot Cruiser. Fine deck space. 2 staterooms. Standard motor. Bargain.



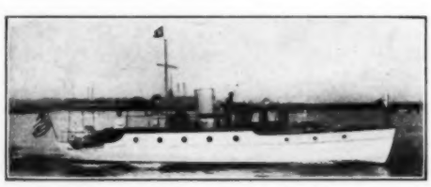
8062.—60-foot Cruiser. Sleeps 6. Bath. Standard motor. Fine condition. Low price.



8003.—57-foot Shoal Draught Cruiser. 13 ft. beam. 3 staterooms. Bath. Speed 12 miles



8142.—57-foot Express. Launched 1914. Fine accommodations. Low price.



8133.—55-foot Cruiser. Double stateroom. Saloon. 2 toilets. Beautiful condition.

8057.—54-foot. Teak finish throughout. Staterooms. Saloon. Speed 10½ miles. Cost $10,000. Bargain.

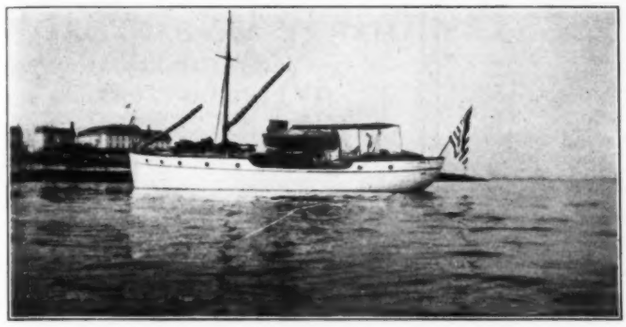
Detailed descriptions of above yachts on file; will be sent by request.

THE MoToR BOATinG MARKET PLACE

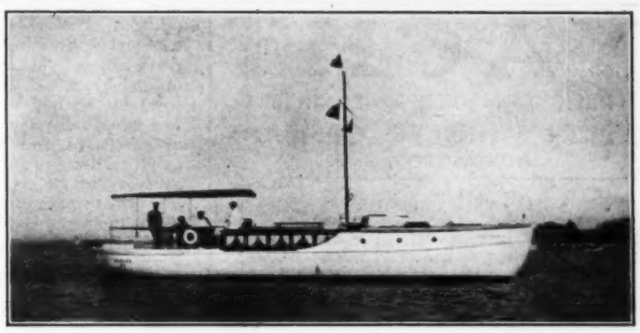
Opportunities for the Motor Boatman

The rate for "For Sale" and "Want" advertisements is 3 cents per word. If an illustration is used the charge is as follows, which includes the making of the cut:
Cut one inch deep, one column wide..... $2
Cut 1¼ inches deep, 1⅛ columns wide..... $5
Cut three inches deep, three columns wide..... $15

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR BoatinG.

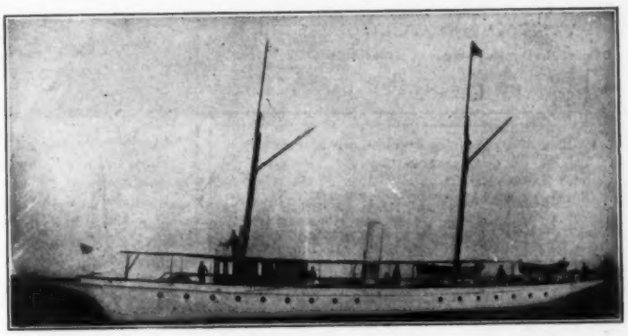


FOR SALE—46-foot motor cruiser, 45 H.P. Holmes motor. Built 1913. Speed 12 miles per hour. Seen in Boston. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



Raised deck cruiser, 45 ft. by 10 ft. by 3 ft. 6 inches, 37½ horsepower; speed, 12 miles an hour; price, $1,500. "Petrel" 155 Milford Avenue, Newark, N. J.

For sale, "THE SPEEDAWAY," 70 foot, twin-screw, high-speed yacht. Power, two 100 H. P. Speedway engines. Speed, 24-25 miles. Splendid sea boat. A-1 condition. Mahogany finish, fully equipped. Steering room, saloon, toilet, canopied deck. Price attractive. Seen at Gas Engine & Power Co., Morris Heights, New York City. Address your agent or owner, Colin H. Livingstone, American National Bank, Washington, D. C.



FOR SALE, No. 7318.—Flush deck Herreshoff steel cruising steam yacht, 132 feet o. a., 18 feet beam, 6 feet draught; four staterooms; saloon, bath room; speed, 12 knots per hour; fully equipped; want offer for immediate sale. Address Stanley M. Seaman, 220 Broadway, New York.

WANTED—Raised deck cruiser. The best $1000 will buy. Not under 35 ft. State make of engine, full particulars. Scott, 730 Riverside Drive, New York City.

WANTED—Modern trunk-cabin cruiser, about 28-foot, for about $500; with high grade 4 cylinder engine. James H. Lamb, 91 Reid Ave., Brooklyn, N. Y.

"THAT'S DIFFERENT." LARGER POWER IS BEING INSTALLED IN MR. BRUN'S PERSONAL DEMONSTRATING BOAT. HENCE A GOOD AS NEW 30-50 H.P. STERLING, 1914 MODEL OUTFIT IS FOR SALE; ALSO A 10 H.P. 2-CYLINDER, 4-CYCLE CAMPBELL, 5 x 5½ ENGINE IS FOR SALE. BARGAIN CONSIDERING ABSOLUTELY FIRST-CLASS CONDITION AND REFINISHED LIKE NEW. ADDRESS WILLIAM BRUNS (PERSONAL), 115 LIBERTY STREET, NEW YORK CITY.

¶ Motor Boating's Market Place columns offer the buyer and seller of used motor boats, fittings, etc., a quick and convenient medium of exchange.

¶ If you are getting a new boat or a new engine, and wish to sell the old one, don't have it rotting or rusting or collecting storage charges — sell it—in the Market Place.

¶ Perhaps you have waterfront property suitable for a yacht club, or for individual yachting enthusiasts—the Market Place goes to over 25,000 individuals interested in all things pertaining to the water.

MOTOR BOATING
119 West 40th Street
NEW YORK CITY

FOR SALE CHEAP—Cruiser 36-8 ft. Built in Oct., 1914. Used as supply boat to dredges, job finished, no further use for boat. Has 25 H.P. Van Blerck Engine. Kreger Groc. Co., 60 Biddle Ave., Wyandotte, Mich.

WANTED—22 ft. to 27 ft. power boat, 6 ft. beam, designed for engine in bow. Prefer engine equipment omitted. Box 690, Bridgeport, Conn.

FOR SALE—A Mietz & Weiss, Kerosene Marine Engine, 3 cylinders, 22 H.P. guaranteed in perfect condition. A. MacInnes, 85 Cortlandt St., New York.

WANTED—Six or eight cylinder racing motor for Hydroplane about one hundred and fifty horse-power. Recent model at sacrifice for cash, full particulars required. Thos. Enright, 260 Brunswick Ave., Toronto.

WANTED—50-foot gasoline cruiser—must be first-class in every respect—state lowest cash price, with full particulars. C. H. Weil, care Goodhart-Hartman Co., 225 W. Randolph St., Chicago, Ill.

FOR SALE—New 2 cylinder, 10 H.P. Campbell engine, run about fifty miles, $340, complete Also complete thirty-foot hull, $200. C. Grecht, Baltimore, Md.

FOR SALE—CHEAP—Pioneer Motor Boat Frame, open boat, 28 ft. long overall, 5 ft. 8 in. beam. Spec. 1½ in. square ribs spaced on 9 in. centers. No defects, white oak throughout. Must sell on account of sickness. Inquire of E. J. Schadt, 300½ Ruck Ave., Milwaukee, Wis.

WANTED—Second-hand gas or kerosene engine three or four cylinders, capable turning forty-inch propeller four hundred R. P. M. John C. Morgan Co., Traverse City, Mich.

BARGAIN—Roberts 2 cylinder, 20 H.P. carburetor coil, oiler, etc. Cheap if sold immediately. 301 Old Main St., Miamisburg, Ohio.

BARGAIN—Detachable Electric Rowboat Motor, brand new, never used. Fits any rowboat or canoe. Six to twelve volts. Quietest, smoothest running portable outboard motor made. Electric motor can be detached and used for any power purpose. List price, $75.00. Sell for $37.50 cash. Box X, MoToR BoatinG.

FOR SALE—Twenty-foot "Hand V Bottom" runabout, seats four, speed twenty-four miles per hour. 35 Horsepower, four cylinder, four cycle Erd motor. Launched in July. Has been run less than five hundred miles. For further information address J. H. Rowland, 901 S. Caroline St., Baltimore, Md.

FOR SALE—Hyde right hand wheel, 16 in. x 24 in. No offer refused. H. O. Jones, New Bedford, Mass.

THE HOLMES MOTOR COMPANY, INC.
2 RELACOS 50 H.P. 4 cylinder, pair..... $1300
2 HOLMES 25 H.P. 4 cylinder, each..... 450
1 HOLMES 25 H.P. 4 cylinder 650
1 30 RUNABOUT with 25 H.P. Holmes motor in good condition 1250
WEST MYSTIC, CONN.

CANADIANS, Second-hand engine bargains. Send for list. GUARANTEE MOTOR COMPANY
73 Bay Street, North Hamilton, Ont., Canada.

USE "SNAPPER" ENGINES for your small boat. They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.

WANTED—An expert small boat draftsman at once. This man should preferably have had experience in the design and layout of high speed motor boats. Address Box 1, MoToR BoatinG.

WANTED—Moderate-draft sail or motorboat, about 45 ft., in part payment for 90-ft. motor yacht. Box 187, Darien, Conn.

34-ft. Glass Cabin Cruiser, 40 H.P., 20th Century engine; fully equipped. For information, 369 East 163d Street.

FOR SALE—27 ft. cruiser, brand new, latest style Price $600 for quick sale. James Wilde, Pearl River, N. Y.

TRIMOUNT ROTARY WHISTLE OUTFITS at BELOW COST

High grade power signals suitable for boats from 12 to 50 ft. Formerly sold for $15.00, $20.00 and $30.00, now priced below cost.

No. 0—$5.00. No. 1—$7.00. No. 2—$10.00.

Run by friction contact with flywheel. Operated from any part of boat. An outfit that will outlast your boat. Order today.

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MORRIS M. WHITAKER, N. A.
307 HIGHMOUNT AVENUE NYACK, N. Y.

Yesterday's Speed Boat To-Day's Runabouts

(*Continued from page* 13)

of motor boating, yet it has given something in return. To it we must credit the perfection of the high-speed motor and many details, such as, self starting, and lighting appliances, windshields, steering wheels, auto tops and many other details which have been perfected by the automobile industry and utilized by motor boats.

While the high-speed runabout is only a few years old, yet it has reached a high state of excellence, and there remains practically only one thing to solve, and that is to get rid of spray at all speeds. This, of course, is a very hard proposition. While most of them throw the spray in such a way that it is clear of the boat at high speeds, their performance when slowed down in a windy chop leaves room for improvement. However, they are fine little boats, and the water is a wet place anyhow and we can be buoyed up with the hope that some genius will heave in sight with some clever method of doing away with these little uninvited guests which occasionally come aboard.

* * *

Has Given Perfect Satisfaction

(*Continued from page* 27)

block at least 1½ inches thick and placed where shown; or if the boat is ceiled, well fastened to the ceiling. The lever's lower end can be fastened to the block with a lag-screw or else by a bolt driven through from the back side of the block. The guide should be of metal, either brass or galvanized iron, at least 3-16 inch or ¼ inch thick and 1¼ inches wide, and of sufficient length to just allow the lever to butt hard up each way. There should be enough clearance so that the lever won't rub—say, about ⅛ inch or 3-16 inch on each side. The wheel ropes are led as shown, even if there is no for'd steering wheel. The guide should be fastened to the coaming with metal filling pieces of sufficient thickness to give the lever the proper clearance, and of sufficient width to give a good fastening surface for the screws which fasten them and the guide to the coaming. The screws should be at least 1½-inch No. 10 brass or galvanized.

The only feature of this gear which one must have, to get good results, is that the quadrant or tiller must be of sufficient radius to give a good purchase on the rudder, which is a good feature anyway, no matter what steering gear is used.

S. M. HIGGINS, Seattle, Wash.

* * *

Lever and Quadrant

AT some time or other we all have to run the boat alone, or some friend, inexperienced at the job, wants to try out at steering. The former generally necessitates a lot of jumping from the motor to the wheel when making landings, and when the friend is steering there is an uncertainty to his movements that is trying on the nerves. With a steering arrangement located alongside the motor, we can run the engine and steer at the same time and feel sure of where the boat is going.

A small steering wheel is generally used in the above capacity, and it takes a couple or more turns of the wheel to put her hard over. A lever with a sliding yoke to which the steering lines are fastened will answer the purpose and is very easily constructed, but a lever attached to a quadrant and "hooked up" in the following manner will be found as efficient and easy working as any other device, if not superior to it.

The quadrant which should be as large, or larger than the one used on the rudder, is located in a position most handy to the engineer, who is also captain of most open boats. The rudder lines generally run along the under

(*Continued on page* 52)

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Yacht Broker
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Corner of Forty-second Street
Telephone, Bryant 6119 NEW YORK

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ENGINES
Catalogs Free.
Motor Boat & Eng. Co.
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9-12 H.P., 4 Cyl., 4 Cycle.
With High Tension Magneto, Kingston Carburetor, Bronze Water Pump, Standard Reverse Gear, $150.00.
$160.00 with Rear Starter Attached.
9 H.P. at 1000. 10½ H.P. at 1200. 12 H.P. at 1400.
Motor can be run 300 r.p.m. or 3000.
Write for further information.
THE HERRMANN ENGINEERING CO.
Detroit, Michigan, U. S. A.

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"Dandy Jr.," Power Tender.
10 ft. x 4 ft., semi-round, 2½ H. P. Blakely, cedar planked, $95.00.
9 ft. "Dandy" rowing tender, full round, mahogany trim, $75.00.
15 ft. "Special" for detachable motors, $65.
"Wisconsin" detachable rowboat motors, $50.00.
Flat bottom cedar dinghies, per ft., $2.00.
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Crescent Ball-Bearing Anchor
The Anchor that *Holds*
Chas. D. Durkee & Co.
Manufacturers Marine Hardware
2 and 3 South St. New York

BURNS WITHOUT ODOR
Barthel Juwel Yacht Stove
Generates gas from Kerosene, giving hot, blue flame. Absolutely safe, even if overturned while lit.
Has Galvanized Frame with Brass Rail around Top and Pan Beneath for Yacht and Boat use. Several styles.
Write for catalogue and prices.
Globe Gas Light Company
25-27 Union St. Boston, Mass.

Water won't hurt it!

No matter where you use Valspar about a boat—whether on the spars, cabin or decks—the freeboard and hull—the cockpit—or inside on any of the cabin woodwork—you will find that it is unaffected by soaking rain or constant wash or spray.

Valspar is the one varnish that never turns white from water exposure. In fact, we recommend washing it to keep it clean, bright and new looking.

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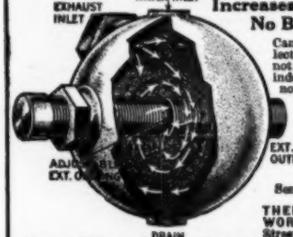

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Aluminum base, copper water-jackets, steel shaft, bronze bearings.

The Watkins Motor Co.
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Lever and Quadrant

(*Continued from page* 50)

side of the deck and the quadrant can be set by means of a small block screwed to the frames or anything solid, so that the lines pull fair and straight away. It will be necessary to bush the square hole in the quadrant to allow it to turn freely on a bolt. A lever hinged to fold up if desirable attached to the outside of the quadrant by a clevis, and drilled to go under the nut on the bolt, will give greater leverage and make handling very easy.

There will be little chance for trouble with this outfit if properly installed. The quadrant being the same size as the one on the rudder, the rudder will be turned the same distance as the side steerer lever. Where backing chains or blocks are impractical on the rudder, stops for the side quadrant will answer the same purpose. The rudder lines will remain taut and there is no chance of their sticking. The wheel will turn just as easily as before and more easily than if the line were wound around the drum of an extra steering wheel.

W. B. MOORES, Newburgh, N. Y.

* * *

Almost Like the Sport of Kings

A RARE but pleasurable job of the book reviewer is giving the once-over to a book or a publication which the lay reader can have no chance of seeing, and then commenting on it mysteriously in print—just as we're doing now. The publication in question is called The Lydonian, printed at Chicago, and, as they might say in the windy city, it is brought out annually, once a year. The subject matter concerns the week's cruise of a group of magazine and newspaper men aboard the 214-foot yacht Lydonia, owned by Commodore William A. Lydon of the Chicago Yacht Club, and it is handled variously or vicariously by the several members of the party.

Among those whose names fly from the editorial masthead are C. G. Sinsabaugh, nautical rewrite man and genial editor of our land contemporary MoToR; Clare A. Briggs, cartoonist and member of the New Rochelle Yacht Club, and a lot of other things; Ring W. Lardner, who has been the first since Josh Billings to discover how remunerative it is to write without the aid of a speller, Sid Smith, cartoonist for the Chicago Tribune; John G. Delong, playmate of William Hale Thompson, the commodore-mayor of Chicago, and half a dozen others. Each and every one of these in his own inimitable style, as the press-agents say, gives in text or picture his impressions of the cruise up and down the sometimes placid waters of Lake Michigan, when every man jack of them lived like a prince for a week—and as we read The Lydonian through, a tear drops from our eye at the thought that MoToR BoatinG readers have missed the best cruise story of the year. To be sure, the cruise was dissimilar in many ways from a week's jaunt in a 14-footer such as you or we might be obliged to use—200 feet makes quite a difference in the length of a boat and in the whole attending circumstances—but a good time can be had in a boat of any length and that is what these fellows had—capital G, capital T.

But no, The Lydonian is issued for private circulation as a token of appreciation to Commodore Lydon, and we believe that not even much red gold could have secured us the magazine rights to it.

And then there is the Insurmountable Obstacle—the obstacle which causes us to head this review "Almost Like the Sport of Kings" and to place it in the back of the magazine to fill up a column: the yacht Lydonia on which the cruise was made is a *steamer*. If the Commodore will build him a motor boat of respectable size and become a regular yachtsman we can promise him and our readers that next year's cruise will be way up in the front of the book.

Faster! F-a-s-t-e-r! F-A-S-T-E-R!

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It probably means excess friction in the stuffing box.

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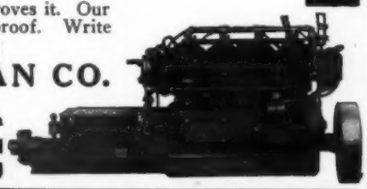

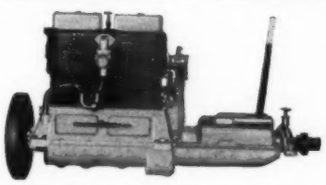

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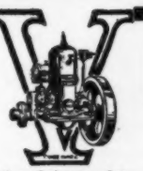

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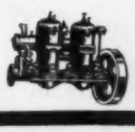

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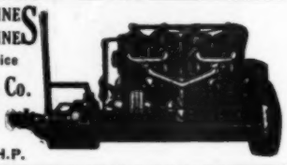

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Durable Marine Varnish
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The U. S. Coast Guard

(*Continued from page 11*)

boatmen. Thus it is the theory that the Coast Guard will henceforth draw many of its recruits from the ranks of professional motor boatmen.

To the consolidation that has brought into existence the Coast Guard, "a part of the military forces of the United States," the old lifesaving service contributed a personnel of about 2,200 officers and men, while the old revenue cutter service which has always been organized on a military basis, contributed to the merger a personnel of 1,900 officers and men. Thus the combination under the new title musters a strength of 4,100 of whom 250 are trained officers. Congress has decreed that whereas in time of peace this humanitarian organization shall operate under the Treasury Department, in time of war, or whenever the President shall so direct, it is to operate as a part of the Navy, subject to the orders of the Secretary of the Navy. Thus the Coast Guard is to constitute in fact a portion of our naval reserve, which relation may render the service of added interest to such motor boatmen as are in sympathy with the movement to enroll privately owned motor boats as an auxiliary naval flotilla.

The 280 stations heretofore known as lifesaving stations and located on the Atlantic, Gulf and Pacific Coasts and on the Great Lakes, will in future be designated as Coast Guard stations. The equipment, however, will show no deviation from the regulation outfit with which motor boatmen are familiar—the breeches buoy, life car, line-carrying gun, etc., etc. The work of equipping every Coast Guard station with a motor-driven surf-boat will be pushed energetically, and at every station where there is an inlet or other satisfactory anchorage conditions, etc., there has been provided or ultimately will be provided a thirty-six-foot motor lifeboat, self-bailing, and self-righting, which will make her way in almost any sea, and which enables a life-saving crew to arrive at a wreck or other scene of action not only promptly, but fresh physically instead of worn out by a long pull at the oars.

Thirty-six cruising revenue cutters and about half that number of smaller vessels have been transformed at a stroke of the pen into Coast Guard cutters. As our readers know, these vessels have come in recent years to undertake life-saving responsibilities undreamed of in the earlier days of the service. All are equipped with radio outfits, and in consequence have been enabled to respond to many a summons when the scene of trouble was beyond the range of action of the shore patrol or when the latter force was inadequate. As Coast Guard cutters these vessels will continue the work of removing or destroying wrecks and derelicts in order to keep clear the travel routes in fresh and salt water, and Seneca, one of the best known vessels of the fleet, will continue to patrol the North Atlantic for several months each year in quest of icebergs. That that is, however, no thought of showing partiality to navigation interests in any particular waters is attested by the fact that the present plans for the Coast Guard contemplate new cutters for the California coast and New York harbor, and three light-draft cutters for saving life and property on the Ohio and Mississippi rivers and their tributaries, especially in time of flood when many motor boats and other craft are cast adrift.

Semper Paratus—Always Prepared, which was the motto of the Revenue Cutter Service, remains the slogan of its more appropriately designated successor, and the flag of the old Revenue Cutter Service has been revised for its new uses merely by the substitution of the words "U. S. Coast Guard Service." The first occupant of the position of Captain Commandant of the Coast Guard is Capt. Ellsworth P. Bertholf, who, be it said for the satisfaction of motor boatmen and all navigators, is a practical and seasoned navigator who is familiar at first hand with conditions in all American waters.

U. S. Aids Navigators

(*Continued from page 15*)

seventh district includes the waters of Florida from Hillsboro Inlet Light Station to Cedar Keys, and the eighth district includes the remaining waters of Florida, Alabama, Mississippi, Louisiana and Texas. The ninth district includes the waters of the Island of Porto Rico.

Another publication issued by the Department of Commerce and of great use to the motor boatman is the Tide Table. These are published annually in advance, and are in several different forms. One of these is the General Tide Table, giving information about the tides at all of the more important ports of the world. Another edition is the Atlantic Coast Tide Table for eastern North America, and the third is the Pacific Coast Tide Tables for western North America, eastern Asia and many island groups.

Besides giving the time of every high and low water for every day in the year the Tide Tables give the height of each of these above mean low water. The tables for the Atlantic coast contain these full predictions at twenty important stations on the Atlantic and Gulf coasts, which are extended to about 1,100 subordinate stations by means of a table of tidal differences and ratios. The method is also given for computing the height of the tide at any particular time of the day at any of these 1,100 stations.

The importance of the motor boat has been recognized by the government in the preparation of the new editions of coast pilots. Much additional data and information about points frequented by the motor boatmen has been included in the new editions, which was decidedly lacking in the older publications. For example, the sailing directions are given for entering harbors, bays, inlets, etc., into which it is possible to carry only a few feet draft, and for places which particularly provide shelter and protection for small craft. Points where fuel, ice and other supplies can be taken on by small boats are mentioned. In the Coast Pilots, aside from the sailing directions and detailed information for thousands of places on the coast, a great mass of general information useful to motor boatmen is given. The system of buoyage for the particular districts is taken up, points where pilots and tow boats may be obtained, quarantine and bridge regulation, a list of dry docks and marine railways, a table giving the prevailing winds during each month of the year for a number of years; information about fog, when and where it is most likely to occur, points where storm warnings are displayed and practical rules for determining the signs of an approaching storm, the best method to avoid same, a list of United States Life Saving stations, the amount of variation of the compass at different points, etc., and so on, are all included in each volume of the Coast Pilot.

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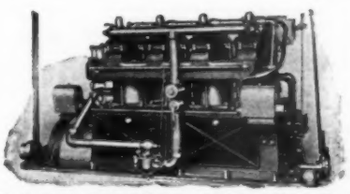

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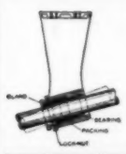

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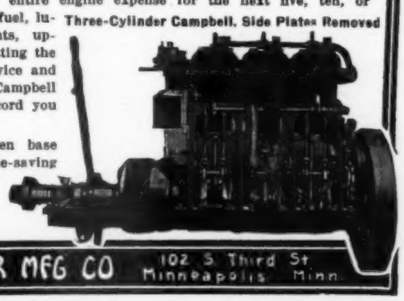

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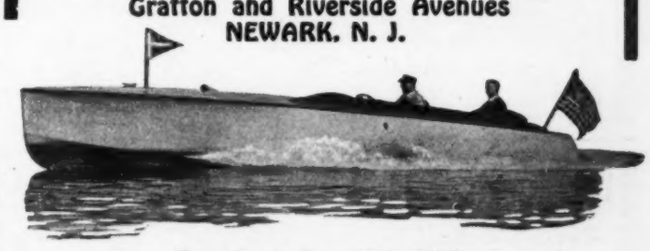

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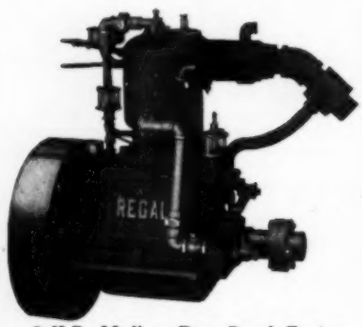

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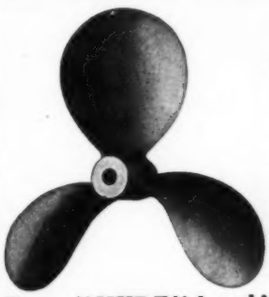

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MORRISTOWN MOTORS

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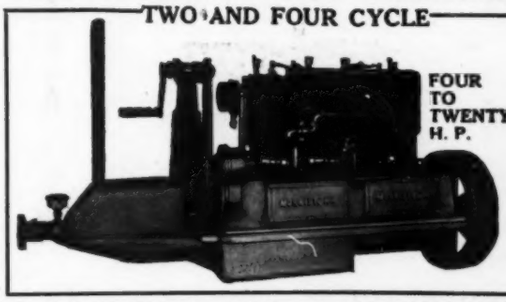

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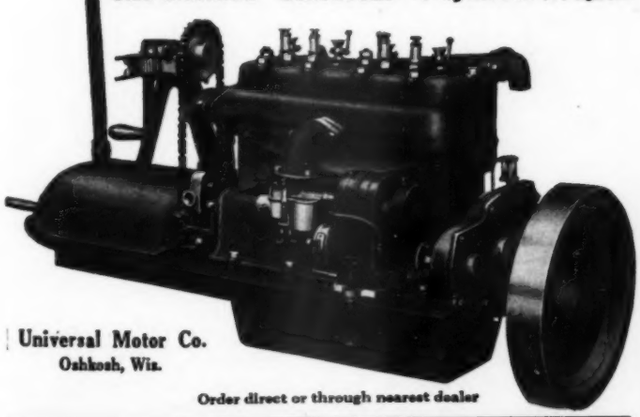

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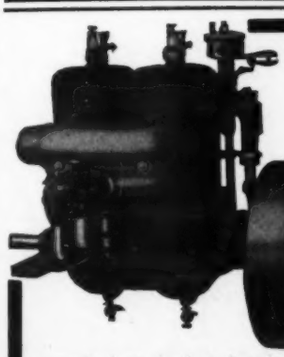

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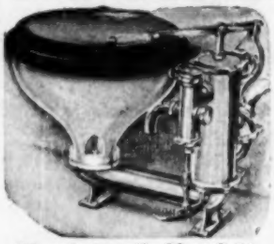

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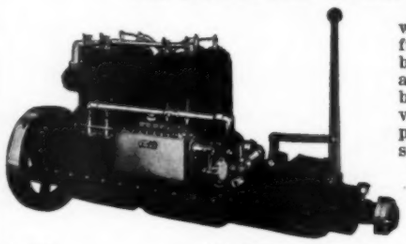

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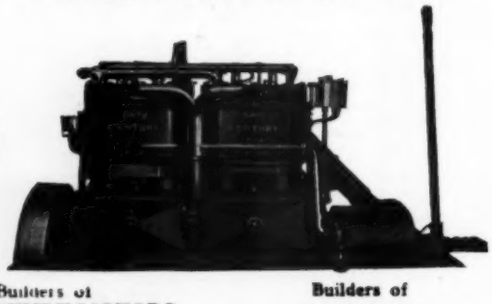

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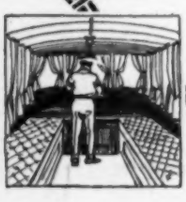

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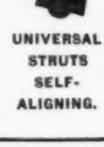

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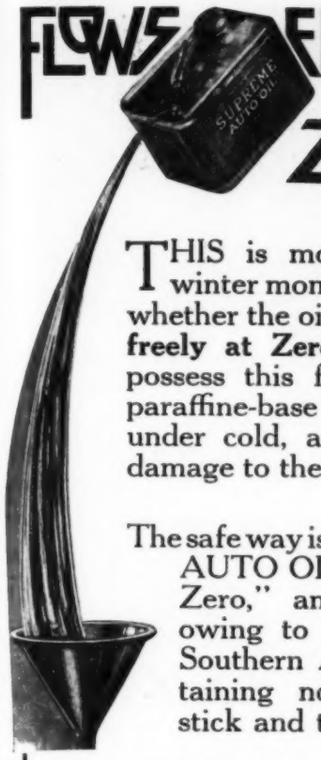

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CRAFT OF INDIVIDUALITY FROM SKIFF TO CARAVEL

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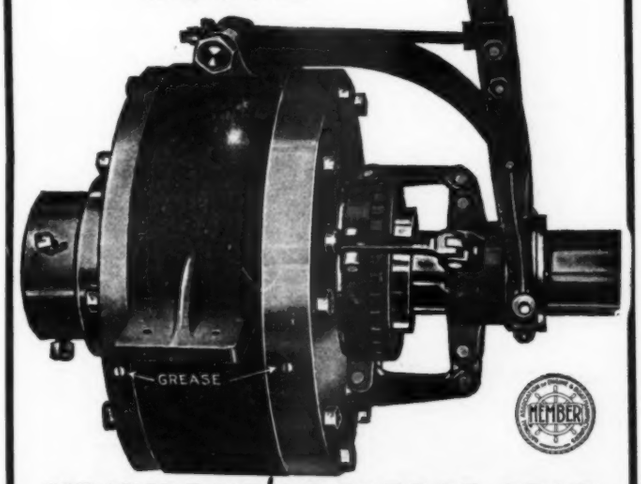

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Manufacturers of Heavy Duty and High Speed Reversing Gears, One Way Clutches, Rear Starter, etc.

AGENTS:—J. King & Co., 10 Church Row, Limehouse, London, Eng. L. H. Coolidge Co., Seattle, Wash. Gasoline Engine Equipment Co., 85 Liberty Street, New York. Rapp-Huckins Co., Boston. Wood, Vallance & Leggat, Vancouver, B. C. Shea Sales Co., Montreal. Thompson Engine & Launch Co., Foot Charles St., Baltimore. A. R. Williams Mchy. Co., Toronto. Warren Boat Co., Chicago.

LAWLEY BOATS

Have Your Next Boat Built by Lawley

If you will investigate the whole field impartially before you decide on the builder for your next boat, you will find that we have better facilities for producing the kind of a boat you want than any other builder.

We have the largest and best equipped yacht building plant in America. The completeness of these facilities enables us to produce better quality, dollar for dollar, than a smaller builder could possibly give. And whatever size or type of boat we build for you, it must measure up to the standard which has made Lawley Boats the best known Quality Boats built in this country.

Motor boats, tenders, cruisers, auxiliaries yachts
Steam power plants Gasoline motors

Write for the Illustrated Lawley Catalog

George Lawley & Son Corp.
Established 1866
NEPONSET, MASS. U.S.A.
CABLE ADDRESS "LAWLEY BOSTON"

DONT BLAME YOUR MOTOR. GET A

BRYANT & BERRY PROPELLER

SPEED GUARANTEED

We Guarantee 1 to 3 Miles Per Hour

To Increase the Speed of Your Boat

This is the guarantee we have been making for the past five years, the guarantee under which we have sold thousands of B. & B. propellers. This is your protection and insurance of satisfaction when you buy a B. & B. wheel. You don't have to depend on argument or unfounded claims.

B. & B. propellers give you the highest degree of speed and power your boat and engine are capable of. Their efficiency is as near perfection as it is possible to attain. They reduce the percentage of slip and produce the maximum propelling force for the horsepower used.

The materials and workmanship used in B. & B. wheels are equal in superiority to the design. We use a special bronze as strong as steel. The accuracy and finish are beyond criticism. And in spite of all this, our prices are lower than for any other make of wheel.

When you buy a propeller, get a genuine B. & B.—don't accept a substitute or imitation. Look for the name "Bryant & Berry" stamped on the hub. Certain peculiarities of design make it impossible for copies of our wheels to equal the originals in efficiency.

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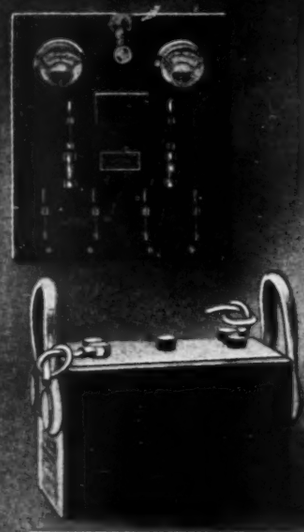
APELCO

MOTOR BOAT ELECTRIC LIGHTING SYSTEMS



A complete new line of dynamos is being furnished for marine lighting work, and the various component parts have been improved, making them more compact and serviceable.

The APELCO Systems are furnished in three different sizes, known as Model B-1, B-2 and B-3.

APELCO B-2 Motorboat Electric Lighting System

APELCO STARTING UNITS, suitable for certain motors, can be supplied. If writing for information, send with your letter bore and stroke, h.p., r.p.m. and number of cylinders of motor for which starting unit is intended.

THE APPLE ELECTRIC COMPANY

Factory, NEWARK, N. J., U. S. A.

ACCURATE CONSTRUCTION MEANS RELIABLE PISTON RING SERVICE

TRADE-MARK-REGISTERED

PATENTED

Piston Rings

Made by

McQUAY-NORRIS MFG. CO.

are made with seventeen distinct and careful operations as against three in the ordinary ring. Micrometer measurements check every dimension, and each ring is closely inspected and tested before being passed.

That's why Leak-Proof Rings give the extra service users get from them. The leak-proof quality of the ring is secured by its perfect adjustment, exact fit and permanently equal bearing on the cylinder, only possible of attainment when this exceptional standard of manufacture is closely followed.

Cheap materials and inferior workmanship may save a trifle in initial cost, but you must have Leak-Proof quality to get thoroughly efficient and reliable service from your piston rings.

Sold by all up-to-date supply houses, garages, hardware stores and repair shops.

FREE BOOK—"To Have and to Hold Power" Send for it to-day

MANUFACTURED BY

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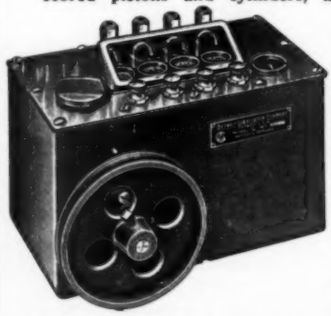
Real Economy For Every Engine

A Detroit Mechanical Force Feed Oiler means real economy because it is adjusted by the operator to feed exactly the amount of oil required—no more—no less.

This means a minimum of oil used for perfect results; but the *real economy*—the *big saving* is evidenced in the freedom from repair bills—the greater service and longer life of the machine.

Detroit Mechanical Force Feed Oilers

are the best possible insurance against burned out bearings, scored pistons and cylinders, annoying delays and shutdowns due to faulty lubrication.



They are made in styles and sizes for every kind of gas—gasoline or oil engine, marine stationary or automobile. Equipped with pulley ratchet, gear or sprocket drive for easy installation on *any engine*.

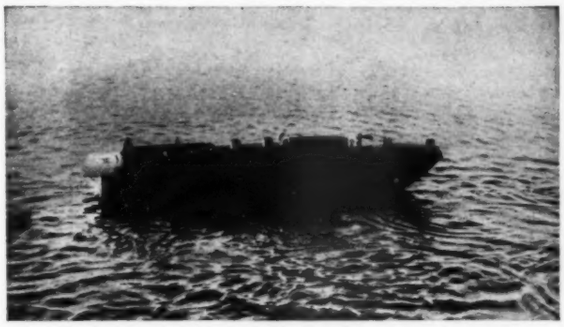
Catalog P-64 giving full information gladly sent on request.

DETROIT LUBRICATOR COMPANY

DETROIT, U. S. A.

Canadian Detroit Lubricator Company Ltd. WALKERVILLE, ONTARIO.

Makers of the Stewart Carburetor



Mr. Vincent Astor's yacht tender "Noma," equipped with 75 H.P. Sturtevant marine motor.

Sturtevant
(REG. U. S. PAT. OFF.)

Marine Motors

are used by the most prominent sportsmen in the country because they are superior in quality and performance to any on the market.

Send for Bulletin No. 216.

B. F. Sturtevant Co.

Hyde Park, Boston, Mass.

Ready for quick delivery—an ideal 43-ft. Cruiser-Houseboat

No better boat could be built for cruising on rivers and inland waterways, and for use along the coast. Room—ample light—good ventilation. Equipped with hot-water heating system, fitting it for Fall and Winter use as well as Summer cruising.

43 x 12 feet, with draught of 2 feet, 10 inches.

Easily handled by one man

Economical in upkeep—reasonable in first cost

Will make nine miles per hour with 20 or 24 h.p. motor.

LET US QUOTE YOU COMPLETE—READY TO STEP ON BOARD

An efficient sea-boat. The most popular type we ever turned out.

Two of these boats now on the ways. Not too far advanced to finish them up to your taste, for use in the South this Winter.

MATHIS YACHT BUILDING COMPANY
COOPER'S POINT
CAMDEN, N. J.

That it's a

Racinewis

is all you really need to know about the cruiser you buy.

Behind this name lies the skill of twenty years of boat designing and building. Racinewis cruisers and motor boats are

Used by U. S. Government
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—by foreign governments, by institutions and individuals at home and abroad. In all Racinewis boats you will find safety, comfort and luxuriousness—combined with speed, power and dependability.

Write for catalog of cruisers, speed and semi-speed family launches, motor boats, rowboats and the famous Racinewis canoe. Mention your preference when writing.

RACINE BOAT COMPANY
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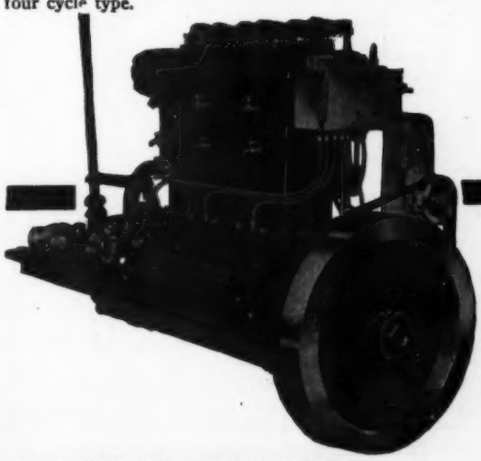
FRISBIE

Overhead Valve Motors

In all Frisbie Motors, the valves are located in the heads of the cylinders where they open directly into the combustion chamber without recesses or pockets. The full force of the explosion is exerted on the top of the piston. The large valves located here give the biggest charge of fresh gas and the cleanest exhaust after the explosion. It is the most efficient, economical type of construction ever discovered. Used in the best marine, automobile and aeroplane engines. Valves are mounted in water jacketed cages—easily removed for grinding or replacement.

Frisbie Motors are up-to-date in every particular. Intake and exhaust manifolds are cast integral with the cylinders, improving the appearance, heating the incoming gas and cooling the exhaust. All models of the four cycle type.



10 Models
3 to 75 H. P.
1 to 6 Cylinders
Gasoline
Kerosene
Distillate
Benzine

Frisbie Motor Co.
7 College St.
MIDDLETOWN
CONN.
U. S. A.

Trade Mark

ONE COAT THIS FALL

preserves the wood, keeps out moisture and prevents rot and deterioration during the winter.

STEARNS-McKAY

Marblehead Anti-fouling Bottom Paints

EMERALD GREEN, LIGHT GREEN, CREAM WHITE

For Tropical Waters

it is equalled only by copper sheathing for protection against Teridos, and is far superior as a preventive of Marine Growth.

For Cruising Yachts–it is the most powerful Anti-Fouler and Preservative known, and it has a hard slippery finish of great durability.

For Racing—it takes a wonderful slippery polish which adds greatly to the speed.

For Wood or Steel

It is *not* a copper paint and *is* non-corrosive on metal.

Yacht White and Yacht Varnish
Black for Topsides

STEARNS-McKAY M'F'G CO. MARBLEHEAD MASS., U. S. A.

This is our new 40 ft. x 9 ft. x 2 ft. 6 in. modified V-bottom Military Type Express Cruiser.

It has accommodations for 8 people, electric starter and lights, running hot and cold water, one man control. An excellent sea boat. Speed, with 6 cylinder Van Blerck, 20 m.p.h. A standardized stock model. Prompt deliveries.

Our works and yards are the largest in the Mississippi Valley. We build many boats to special order, and have twelve stock model runabouts and cruisers.

Portfolio Catalog on Request

Saint Louis Yacht & Boat Co., Saint Louis
General Offices - - 1548-1551 Pierce Building

MARINE HARDWARE OF PROVED WORTH

The pride you take in your boat should extend to its hardware fittings. Insist on getting the best—ask for marine hardware. Attractive appearance and sterling quality are combined in anchors, steering wheels, deck plates, pumps, rowlocks, compasses, boat nails, chains, port lights and all other articles of marine hardware.

AUTO BOAT STEERERS

Strong and easy to operate. The steering post is made of heavy brass and is inside the outer tubing—a feature which insures safety and convenience. Spark and throttle control are incorporated in the steerers, both controlling levers being conveniently placed inside the wheel. Furnished with Rack and Pinion; with Drum as per illustration; with Drum and direct S. & T. Controls; also two styles of Bridge and Deck Steerers. Grooved Drum is optional on all Drum Steerers.

Wilcox, Crittenden & Co., Inc. Established 1847

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Wilcox, Crittenden & Co., Inc.
Established 1847
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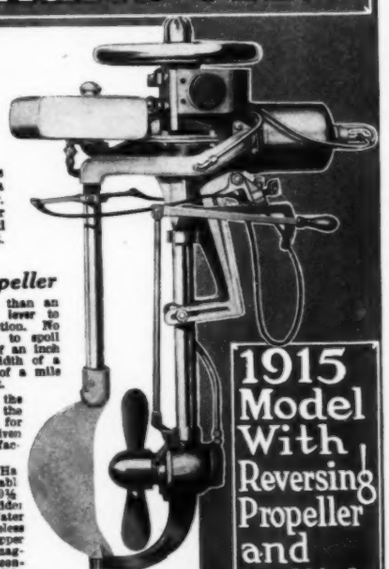
WORLD'S LARGEST MANUFACTURERS OF MARINE HARDWARE
Manufacturers of the Famous Maxim Silencer for Motor Boats

The New

Waterman PORTO

AN ENGINE WITH A THOUSAND SPEEDS



Stop your boat in half its length from top speed, at a touch of the control lever. Dock without slowing your engine. Troll at any speed with any type or size of boat. With the

New Reversing Propeller

you have more perfect control than an automobile. Simply shift the lever to the right speed and set the friction. No fixed notches in the quadrant to spoil perfect adjustment, when 1-16 of an inch in either direction (half the width of a notch) may mean a difference of a mile an hour in your particular boat.

Our 1915 model also carries the essentials which have made the Waterman Porto the leader for more than 9 years and have given 30,000 users unqualified satisfaction.

Three H. P., weighs 65 lbs. Ha automobile carburetor, removabl bearings, solid bronze skeg. 10½ inch propeller. Steers by rudder from any part of boat. Water cooled exhaust manifold, noiseless under-water exhaust, spun copper water jacket, high tension magneto, Aero Metal piston and connecting rod. Guaranteed for life.

Demand these essentials or you will not be getting full value for your money.

Write for free Marine Engine Book containing full information on our complete line of engines.

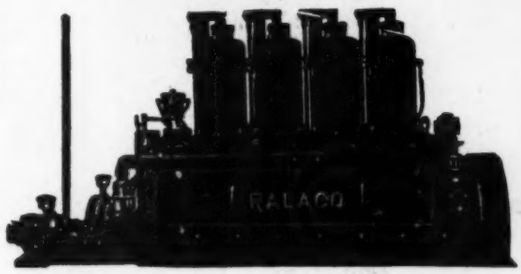
WATERMAN MOTOR COMPANY
201 Mt. Elliott Avenue Detroit, Michigan

1915 Model With Reversing Propeller and Multiple Speed Control

RALACO
THE SILENT SIMPLIFIED ENGINE

AN ENGINE OF KNOWN STABILITY

and with an enviable reputation for quiet operation, cleanliness, freedom from noise, and economy.



THE S. M. JONES COMPANY

616 Segur Avenue, Toledo, Ohio, U. S. A.

NEW YORK
Power Boat Eng. Co.
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Winter—Boating—Florida—THREE ALLIES

"Speedway" boats and engines have made the increasing success which boating in the South has attained.

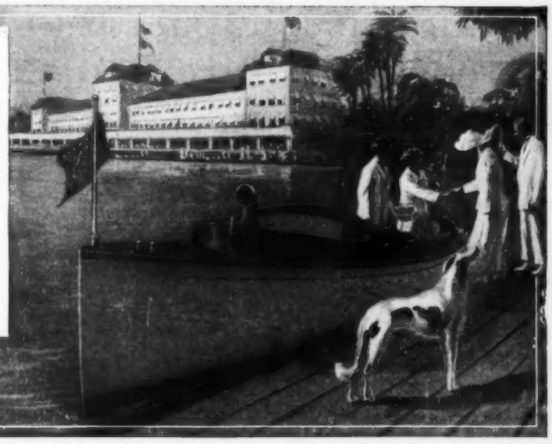
We are prepared now for the coming season with a complete line of "Speedway" boats and engines for immediate delivery.

Fishing boats and express launches with sight-seeing wells a specialty.

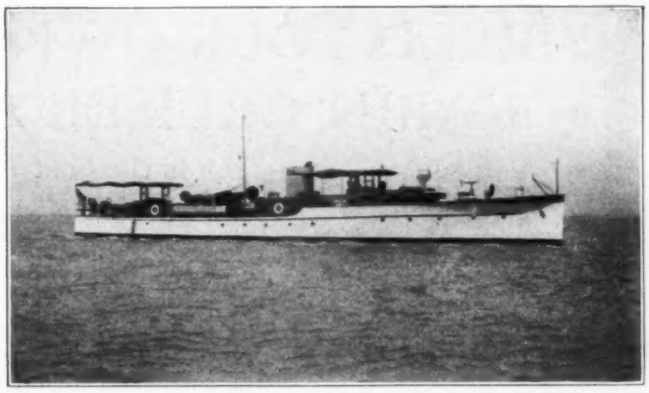
Write to us now.

Gas Engine & Power Co., and Charles L. Seabury & Co., Consolidated
Launch Dept. A, Morris Heights, New York City

Speedway MOTOR BOATS and ENGINES



THE BEST BOATS BUILT MEMBER



100-Foot Cruiser MAROLD. Three 300-H.P. Sterling engines. Fastest motor cruising yacht in the world, combining perfectly the elements of high speed, comfort and safety.

Matthews cruisers are known the world over as aristocratic in appearance, of unsurpassed design and workmanship, with all little details worked out for the owner's maximum comfort. Superior facilities and long experience assure satisfaction. Correspondence solicited.

THE MATTHEWS BOAT COMPANY
PORT CLINTON, OHIO
Builders of the world's finest motor yachts

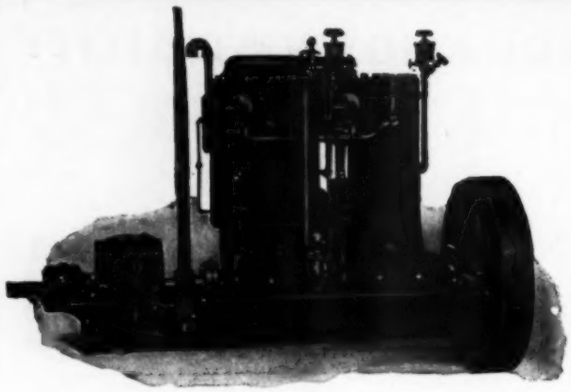
32-ft. Runabout built for Mr. P. A. Rockefeller, 26 Broadway, New York.

When you see a "Perfect" Motor Boat, you'll find it to be a NIAGARA.

Niagara Motor Boats

Niagara Motor Boats have everything in Design, Material, Equipment, and Finish, which long experience and a thorough knowledge of motor boat requirements can suggest. They are meeting the desires of the most critical and exacting purchasers. Send for 1915 descriptive literature, No. 115, Runabouts; No. 18, Cruisers.

Niagara Motor Boat Company
210 Sweeney Street **North Tonawanda, N. Y.**

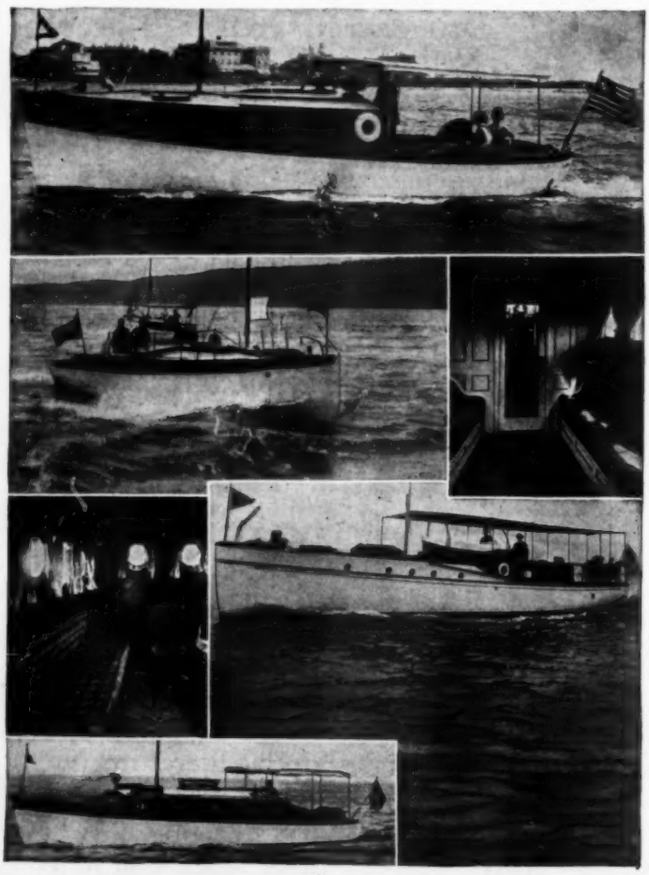


The "Automatic"

An engine that is *always* ready to run—an engine that will always run at the *least expense* is well worth having. Being able to get at *any* part of your engine without taking it all apart is another great advantage. These are the requirements the four-cycle AUTOMATIC fulfils. It is the engine that will fit your pocket-book, your boat and your expectations.

The Automatic Machine Co.

Bridgeport, Connecticut



BUILD YOUR OWN CABIN CRUISER

You Save Over Two-thirds the Cost

We furnish all materials, cut to shape and fitted. We do all the difficult part of the work. Thousands of amateurs have erected and finished our knocked-down boats. Full illustrated instructions cover every step of the work. You may finish and fit out the boat as simply or elaborately as you wish. Start your cruiser this fall. We furnish any length from 25 to 41 feet. Knocked-down cruiser frames from **$90.00** to **$195.00**. Complete knocked-down cruisers, all materials and fittings, everything (except the paint), from **$180.00** to **$395.00**. There's pleasure, profit and education in boat building.

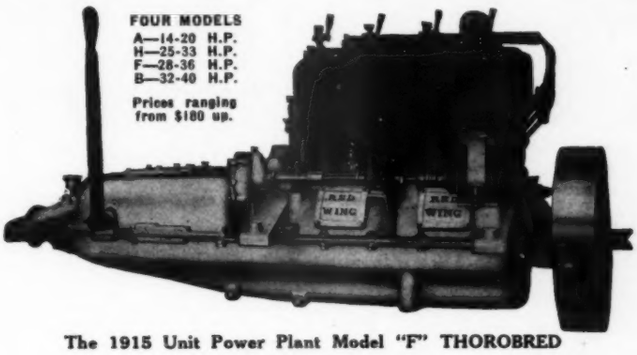
Send for our FREE BOAT CATALOG of canoes, rowboats, launches, sailboats and cabin cruisers, sold either knocked-down or finished ready to run.

BROOKS MFG. CO.,

Largest and oldest concern of its kind in the world.

6311 Brooks Avenue

Saginaw, Mich., U. S. A.



The 1915 Unit Power Plant Model "F" THOROBRED
28-36 H.P., 4 1/16 x 5"

Red Wing Thorobred
THE MOTOR WITH POWER TO SPARE

Our 1916 Line Offers Astounding Motor Values

If everyone knew, as well as we do, the quality and satisfaction that is being built into Red Wing Thorobred Marine Motors we would be quadrupling our output for 1916. A great many DO know it; others are finding it out so rapidly we are compelled to prepare to practically double our facilities for 1916. New automatic, modern devices to increase quality and efficiency at LOWER SELLING PRICE are being added to our equipment. The 1916 Red Wing Thorobred Line will lead the marine engine trade of America, because the Thorobred is as good a motor as engineering science can possibly devise, at a price only scientific, quantity manufacture can make possible.

Our 1916 line includes the new 14-20 H.P. "Thorobred"—every inch Red Wing quality, bore 3½-inch, stroke 4½-inch, selling for $180.00 and up.

You'll be cheating yourself if you buy a motor without investigating the "Thorobred"

Write us NOW for 1916 catalog

RED WING MOTOR CO. Dept. B. RED WING, MINN., U. S. A.

VIPER
Trade Mark Reg.
U. S. Pat. Off.

VIPER SEA SLED

HICKMAN PATENTS

SEA SLED
Trade Mark Reg.
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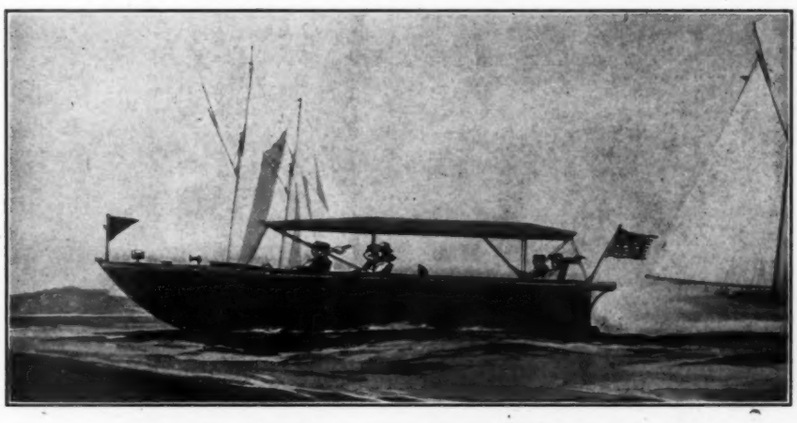


24-foot Standard Sea Sled running at 35 miles per hour

To-day no man is informed concerning motor driven boats capable of any speed unless he has learned what we have to say.

Bulletin No. 18, by Mr. Hickman, just published, gives information that is not available elsewhere.

Would it surprise you to learn that not only has the Sea Sled every other advantage over the older type of boat, but that it is already more efficient?

Murray & Tregurtha Co.
340 West First St., South Boston, Mass.

Viper Co., Ltd.
Pictou, Nova Scotia, Canada

For Fast, Comfortable Cruising

THIS boat, TARPON II, is not a racing machine nor was she built down to fit handicap rules. She has covered some thousand miles in week-end trips during the last five weeks. On her cruising weight of 13,000 pounds, her Type PM 6-cylinder 5¾ x 7 Wisconsin Motor, developing 90 H. P. at 800 R.P.M., moves her along at a three-minute mile rate—not 20 knots—only 20 miles an hour consistently.

Wisconsin CONSISTENT **Motors**

are unequalled for speed, endurance, economy and consistency.
Illustrated catalog on request.

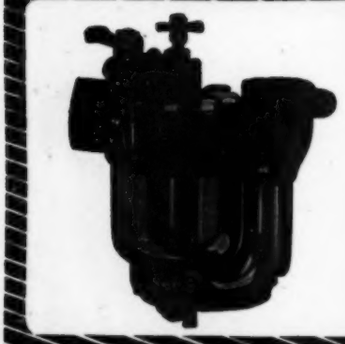
Wisconsin Motor Mfg. Co. Sta. A. Dept. 302 **Milwaukee, Wis.**

NEW YORK BRANCH:
50 Church Street,

T. M. FENNER - - - - - - **Factory Representative**

MORE POWER - SPEED - ECONOMY

Would you like more power in your boat, more speed and better fuel economy? Of course, you would! The only question is, how much are you willing to pay for it. Undoubtedly a new engine would give it to you, but at a cost of several hundred dollars. Perhaps a new carburetor will give it to you, and at a cost of only a few dollars. Before you consider buying a new engine, try a



KINGSTON
"ENCLOSED TYPE"
CARBURETOR

No matter how good your engine may be we are certain that this Kingston Carburetor will improve it. In fact, we are so sure of this that we are willing to take all the risk of proving it. You can put a Kingston on your engine and if it doesn't prove itself worth the price, the test will cost you nothing.

This carburetor has only one adjustment. Any novice can set it correctly in a few seconds, and keep it in adjustment under all conditions. It has no springs or dashpots to wear out. Altogether we think you will find it the most satisfactory carburetor you ever used. Are you willing to be shown?

Write today for prices, trial offer and guarantees.
Made for all sizes and types of engines.

New York Office, 1733 Broadway. Chicago Office, 1430 Michigan Ave
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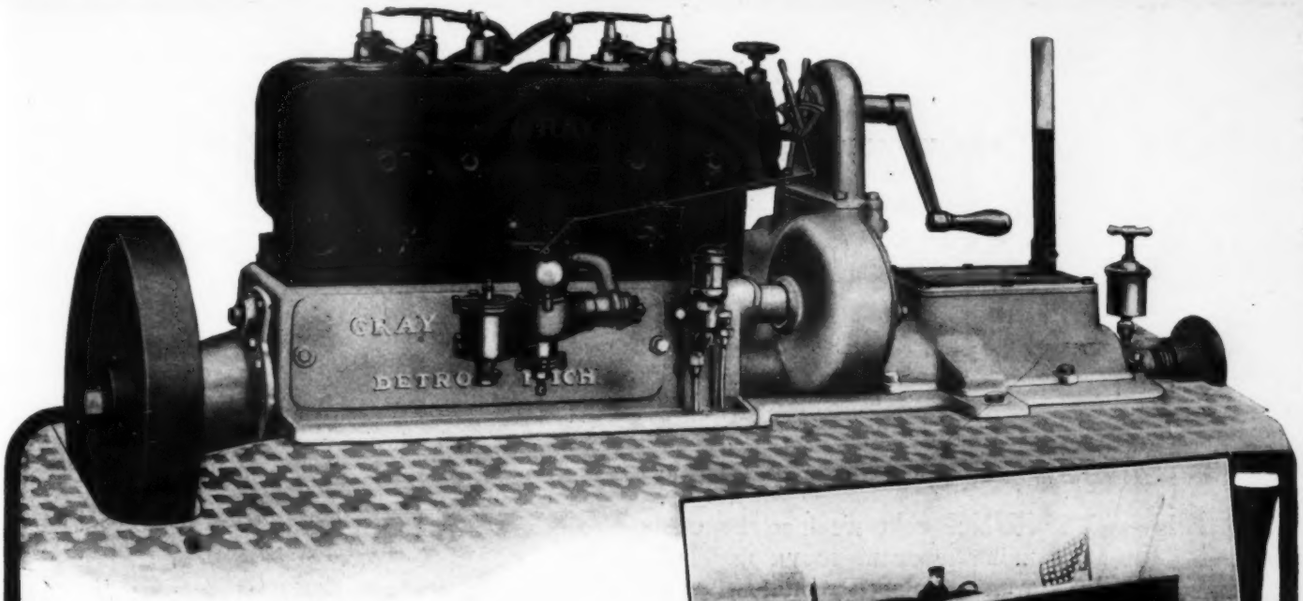
BYRNE-KINGSTON & CO., KOKOMO, INDIANA.



GRAY MODEL "D" 4-CYCLE

YOUR IDEAL ENGINE

Silent, safe, clean, ***accessible,*** dependable, efficient and economical.

Designed **strictly for marine work. A real *marine* motor—with the *marine* features you have *always* wanted—at a very moderate price. Manufactured and backed up by an old established and *responsible* concern.**

GRAY Model "D's" are the most universal engines on the market—compact and light enough for a 16-ft. Hydroplane—powerful enough for a good sized cruiser—speedy enough for a 30-footer, and has the strength and endurance required for a work boat.

Note the different classes of boats in which GRAY "D's" made good. From the 18-ft. Hydroplane at the top, to the large house-boat and heavy work-boat, where strength and endurance is the supreme test.

After looking over all the different makes of marine engines the owners of these boats selected the GRAY Model "D." Letters from Model "D" users are full of enthusiasm regarding the splendid service this motor has given.

The improved gear housing prevents any possibility of oil throwing from the clutch, and the new GRAY "economizer" found on the 1916 Model "D's," gives you still more gas and power per gallon of fuel used.

10-12 H. P. Model "D" 4-Cycle

Known as the fisherman's special. Designed especially for fishing boats or any other boats where reliability, strength and endurance are the chief factors. Can be throttled down to slow enough speed for trolling.

Model "D" Four-Cycles, Price... $178.00 up

GRAY TWO-CYCLES—These motors are recognized all over the world as the standard two-cycle marine motor. Made in sizes from three to 36 H.P.—one to three cylinders.

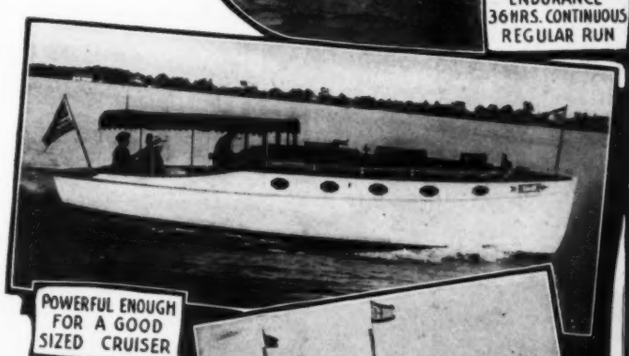
Write today for new marine catalog, showing complete line of GRAY two- and four-cycle marine motors.

BOAT BUILDERS—Let us help sell your boats. Write for our 1916 co-operative plan.

DEALERS—The GRAY line is complete—2 and 4-cycles—3 to 50 H.P. Write for our 1916 proposition.

GRAY MOTOR CO.

1174 Gray Motor Bldg. Detroit, Michigan



GRAY MARINE 2 STROKE & 4 STROKE MOTORS

TEXACO MOTOR OIL

The Severest Test For Your Motor Oil

DURING cold weather and on bad roads a motor lubricant shows itself at its best or worst. In such conditions are embodied the severest test which an oil has to meet.

How will the oil you use meet these conditions this winter? Many passably good "fair weather" lubricants congeal, grow "lumpy" and lose their power of lubrication in zero weather. The result is lost pleasure and costly motor repairs.

Texaco Motor Oil shows a zero cold test. It flows freely at that temperature.

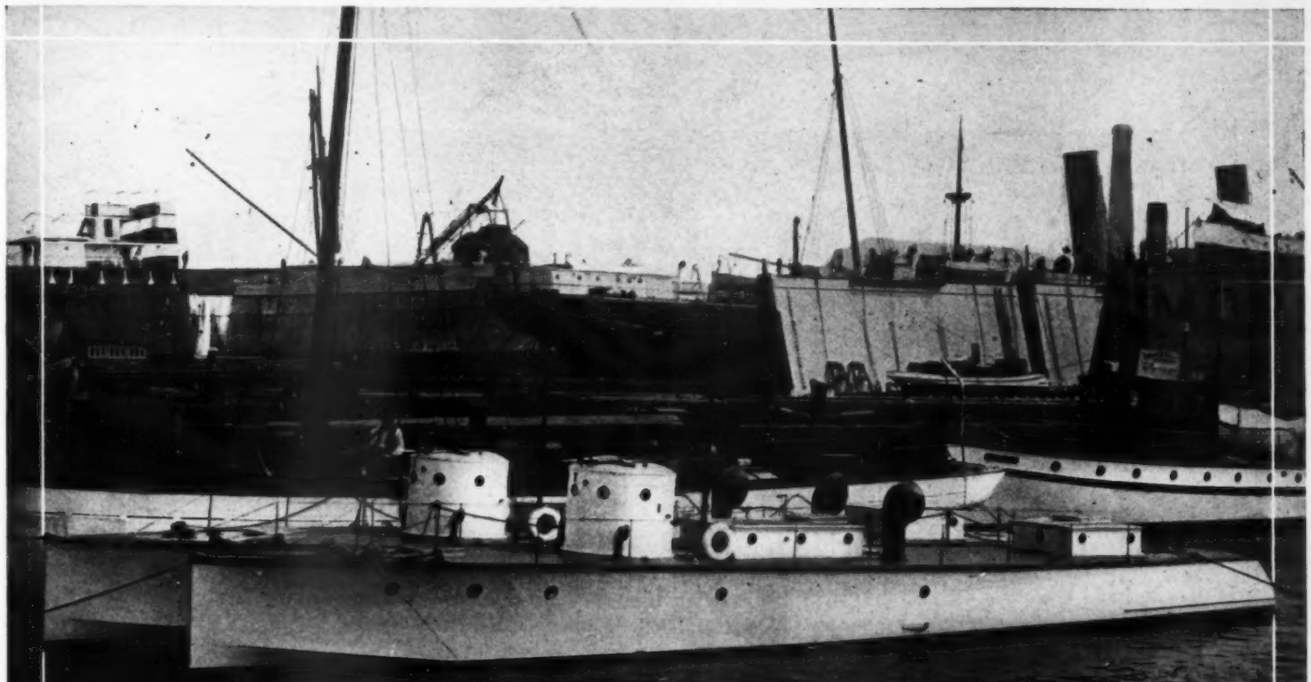
Winter or summer it unfailingly helps your motor deliver its maximum power with minimum consumption. It never deposits a hard carbon crust.

Make Texaco Motor Oil your all-the-year-around lubricant, and forget lubrication troubles.

Write for interesting booklet, "Motor Miles." The reading of it will be worth your while.

In 1 and 5 gallon cans at most good garages and supply shops.

THE TEXAS COMPANY
New York



PARAGON REVERSE GEARS

are found wherever there's real work to do—whether in carefree pleasure boats, hard-working fisher craft or dare-devil submarine chasers like these.

PHOTO COPYRIGHTED BY UNDERWOOD & UNDERWOOD, N.Y.

THE "MOSQUITO FLEET" of Submarine Chasers

The two slim white, high-powered motor boats illustrated above are a part of the Mosquito Fleet which is being put into commission by one of the contending factions of the European War. They are intended to overtake submarines and put them out of commission, being equipped with rapid-firing guns for this purpose.

The boats are 50 feet long by 10 feet beam, and are equipped with three 8 cylinder Van Blerck Motors, developing 175 H.P. at 1450 R.P.M. each. The boats can make over 30 miles an hour, and are equipped with twin rudders, which enable them to turn in little more than their own length. Going at terrific speed and running zig-zag they offer the most difficult target to a submarine.

The pilot house has a covered iron ceiling, and is large enough for one man to move in comfortably. A sliding hatch forward of the sleeping quarters accommodates six men, another at the stern accommodates two. In appearance they very much resemble speed boats, except that they are completely decked over so no water can penetrate the hull.

MORE engine builders than ever before will equip their motors next season with Paragon Gears.

No wonder. Paragons enable their motors to deliver to the propeller—*always*—all the power the motor develops. They reverse quickly, quietly and surely—*always*.

PARAGON REVERSE GEARS

are built for engine manufacturers who want to give you the best motor service possible to buy.

Find out if the motor you intend to buy is Paragon Geared.

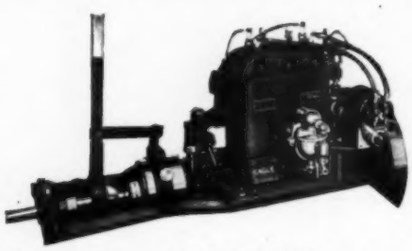
Send for Booklet

PARAGON GEAR WORKS

Evans Stamping & Plating Co.

Cushman Street **Taunton, Mass.**

Make Your Boat A Winner



The Model 2-O EAGLE Engine, the power plant of the fastest boat for size and power in the world.

A regular Model 2-O High Speed EAGLE Engine will do the trick.

SILVER HEELS II won the championship of the 40-60 Class in the South Jersey finals at Ocean City on September 4th with a Model 2-O EAGLE.

This same model helped make the little 16-foot FLYING EAGLE famous, driving it a speed of 22 miles per hour.

Other EAGLE-equipped boats in the South Jersey Races have also carried off honors as shown below:

HOLLY BEACH YACHT CLUB REGATTA

Saturday, July 3, 1915—Open Boats Rating Under 50

Winner—Foggy Dew	Chelsea Y. C.	12 H.P., Model 2-O EAGLE
Second—Silver Heels II	Stone Harbor Y. C.	7 H.P., Model 2-K EAGLE

4 boats finished in this class out of 4 entrants

OCEAN CITY MOTOR BOAT REGATTA

Saturday, July 10, 1915—Open Boats Rating from 40 to 60

Winner—Foggy Dew	Chelsea Y. C.	12 H.P., Model 2-O EAGLE
Second—Microbe	Stone Harbor Y. C.	7 H.P., Model 2-K EAGLE
Third—Seamahr	Chelsea Y. C.	12 H.P., Model 2-O EAGLE

6 boats finished in this class out of 7 entrants

ATLANTIC CITY YACHT CLUB REGATTA

Saturday, July 24, 1915—Open Boats, Class B, Rating Under 50–59 Knots

Winner—Seamahr	Chelsea Y. C.	12 H.P., Model 2-O EAGLE
Second—Chidora II	Chelsea Y. C.	12 H.P., Model 2-O EAGLE
Third—Silver Heels II	Stone Harbor Y. C.	7 H.P., Model 2-K EAGLE

4 boats finished in this class out of 9 entrants

CHELSEA YACHT CLUB REGATTA

Saturday, July 31, 1915—Open Boats Rating from 40 to 60

Second—Chidora II	Chelsea Y. C.	12 H.P., Model 2-O EAGLE
Third—Foggy Dew	Chelsea Y. C.	12 H.P., Model 2-O EAGLE
Fourth—Seamahr	Chelsea Y. C.	12 H.P., Model 2-O EAGLE
Fifth—Silver Heels II	Stone Harbor Y. C.	7 H.P., Model 2-K EAGLE

6 boats finished in this class out of 8 entrants

FINALS—OCEAN CITY YACHT CLUB REGATTA

Saturday, September 4, 1915—Open Boats Rating from 40 to 60

Winner—Silver Heels II	Stone Harbor Y. C.	12 H.P., Model 2-O EAGLE
Second—Foggy Dew	Chelsea Y. C.	12 H.P., Model 2-O EAGLE
Third—Chidora II	Chelsea Y. C.	12 H.P., Model 2-O EAGLE
Fourth—Seamahr	Chelsea Y. C.	12 H.P., Model 2-O EAGLE
Fifth—Chanticleer	Chelsea Y. C.	12 H.P., Model 2-C EAGLE

6 boats finished in this class out of 9 entrants

You don't have to wait for EAGLES. We can always ship on receipt of orders.

Send for Catalog.

THE STANDARD CO.

Torrington, Conn.

THE FOUR SPLITDORF PLUGS

THE AFFIDAVIT

Sept. 8, 1915.

This is to certify that I used the four SPLITDORF Spark Plugs, in the engine of my boat, CLIO II, on my 12000-mile trip, covering a period of twelve months, traveling through the Mississippi River, the Gulf of Mexico, Atlantic Ocean, St. Lawrence River, and the Great Lakes.

These are the original plugs I started out with, and they never refused me a spark. For further particulars of the trip, see "Motor Boat" for September 25.

I am only too glad to give the above recommendation for SPLITDORF Plugs for Marine motors, for I honestly believe that by the use of SPLITDORF Plugs, I was saved a great deal of trouble and unnecessary delay.

Chas E Hillman

ALBERT E. LIFTON NOTARY PUBLIC COOK COUNTY, ILL.

Subscribed and sworn to, before me, this, the eighth day of September, 1915.

Albert E Lifton

THE BOAT

SPLITDORF ELECTRICAL COMPANY

ATLANTA.....10-12 E. Harris St.	DETROIT.....972 Woodward Ave.	PITTSBURGH.....5941 Ellsworth Ave.
BOSTON.....1112 Boylston St.	KANSAS CITY.....1827 Grand Ave	PHILADELPHIA.....210-12 N. 13th St.
CHICAGO.....64-72 E. 14th St.	LOS ANGELES.....1215 S. Hope St.	SAN FRANCISCO.....1028 Geary St.
CINCINNATI.....811 Race St.	MINNEAPOLIS.....34 S. 8th St.	SEATTLE.....1628 Broadway
DALLAS.....402 S. Ervay St.	NEWARK.....290 Halsey St.	TORONTO.....469 Yonge St.
LONDON PARIS	NEW YORK.. .....3-5-7 W. 61st St.	MILAN MELBOURNE

Factories: NEWARK, NEW JERSEY

(All SPLITDORF features are fully covered by patent or patents pending)

Buyers' Reference&

Special Issue—December Motor Boating

THE December issue of Motor Boating is the Annual Buyers' Reference and Export Number —the annual reference issue of the year. It is without question the most valuable issue of the year, both for the reader and the advertiser.

Every one who has anything to sell to motorboat owners, dealers, manufacturers or foreign buyers will find this special number the most profitable advertising investment of the season. Extra circulation, extra reader interest and extra attention as a volume for reference use throughout the year, insure a degree of value which warrants the use of maximum space by every advertiser.

These Are the Special Features

In addition to the regular editorial features and departments, this Annual Reference issue will have many special features.

Buyers' Reference Feature

December Motor Boating will illustrate and describe every stock boat, motor, accessory, part or other device in the 1916 market—a complete catalog of the American marine industry. For instance, the specifications of each model of every motor manufacturer will be tabulated and arranged according to type and horsepower, so that the essential details are instantly accessible.

The buyer, architect or builder can refer to this section and at a glance see all the different makes of motors available for any one particular set of requirements. Manufacturers will then receive inquiries for catalogs and literature giving complete descriptions and information about the motors selected for investigation.

Experience has proved that December Motor Boating is saved throughout the season for this purpose by every prospective buyer. This feature is especially valuable to foreign buyers and those outside of the principal marine centers, as a great deal of time and trouble is saved by the ready reference.

Articles on Trade Conditions

Special articles on the business side of the marine trade will appear in December Motor Boating. A prominent engine manufacturer will review the field from the standpoint of the motor builder and another article will cover the subject as seen by the boat builder and architect.

The developments of the past season and the tendencies that affect future conditions will make it a valuable number for the business men of the industry.

Characteristic Boat Designs

December Motor Boating will contain illustrations and descriptions showing the up-to-date designs of new motor boats and yachts characteristic of all the prominent naval architects. These are designs which the architects themselves have selected at our request to represent their latest and best work. Many of them are for 1916 yachts, still to be built, and therefore contain the newest ideas for the various sizes and types of boats.

This feature will be invaluable to buyers, architects and builders who want a comprehensive record of recent development and practice in marine design. It will be referred to constantly by thousands of persons who are planning and arranging new boats, reaching them at the time when they are most interested in the advertisements of various articles and accessories for equipment. Every advertiser will benefit by this extra attention.

The Marine Trade is Evolving

Many marine manufacturers have done an excellent business during the past year. Conditions at present forecast even better things for 1916. Like the automobile industry, the marine trade must live and grow on a foundation of publicity, holding the attention and interest of its patrons against all counter-attractions.

Motor Boating is the kind of magazine that benefits the trade it represents far beyond the returns and sales of individual advertisers. It is worthy of support on this basis alone, but it returns in actual value to each advertiser and reader many times more than it costs the individual or the industry.

Reserve Your Space at Once—Send Copy Early

e& Export Number

Reaching All Classes of Readers

THE various editorial features of the Annual Buyers' Reference and Export issue have been planned so that this special issue will have special interest and value for readers of every class. The man who is building or merely refitting a little 15-footer, the builder, the architect, the motor and accessory manufacturer, the supply dealer or agent, the export buyer—to the man who orders a $100,000.00 yacht—all will be reached by some of the special features of this great Annual.

Every man whose interest in boating, as a pastime, a sport or a business—whose interest is sufficient to make him read a special marine magazine—will have that interest intensified when he reads the December Motor Boating. Such a number can only be published once a year—there is not enough material available for two such issues without repetition.

Special Export Value and Foreign Circulation

A tremendous opportunity awaits the marine industry in export business and foreign trade. World conditions were never more favorable to the American manufacturer for getting a valuable share of the world's trade. Arrangements being made by American financiers and large exporters in other lines open up an outlet for millions of dollars worth of boats, engines and marine supplies of all kinds.

Special Export Information

December Motor Boating will contain an exhaustive and authoritative article on the export marine trade and export opportunities, written by one of the best informed export specialists in the country.

The writer of this article has been in touch with every phase of the American export trade for many years, not merely in one line of trade or with one foreign country or one continent. He has studied the subject in a large way, considering it from the viewpoint of the buyer as well as the seller. Every facility afforded by a trained export organization as well as the entire American Consular Service, has contributed to the knowledge on which this article is based.

Extra Export Circulation

Besides our large regular export circulation, copies of December Motor Boating will be placed in the hands of every American Consul and Commercial Attaché the world over. The U. S. Government maintains a world-wide organization for the development of foreign trade. Its business agents are at the service of all American manufacturers. To have your advertisement in the files of each of these foreign representatives is one of the first essentials for the development of future export business.

Extra Reprints Gratis

To every display advertiser using a full page in December Motor Boating we will supply gratis 1000 extra reprints of the advertisement, printed on white coated paper. Display advertisers using two pages will receive two thousand reprints, and those using four pages will receive four thousand reprints without extra charge.

These reprints are valuable for circularizing, following up the advertisement with direct mailing to buyers and dealers, show distribution, etc. This is an opportunity to secure a supply of extra printed matter without cost. It is limited to those who use one full page or more of display advertising.

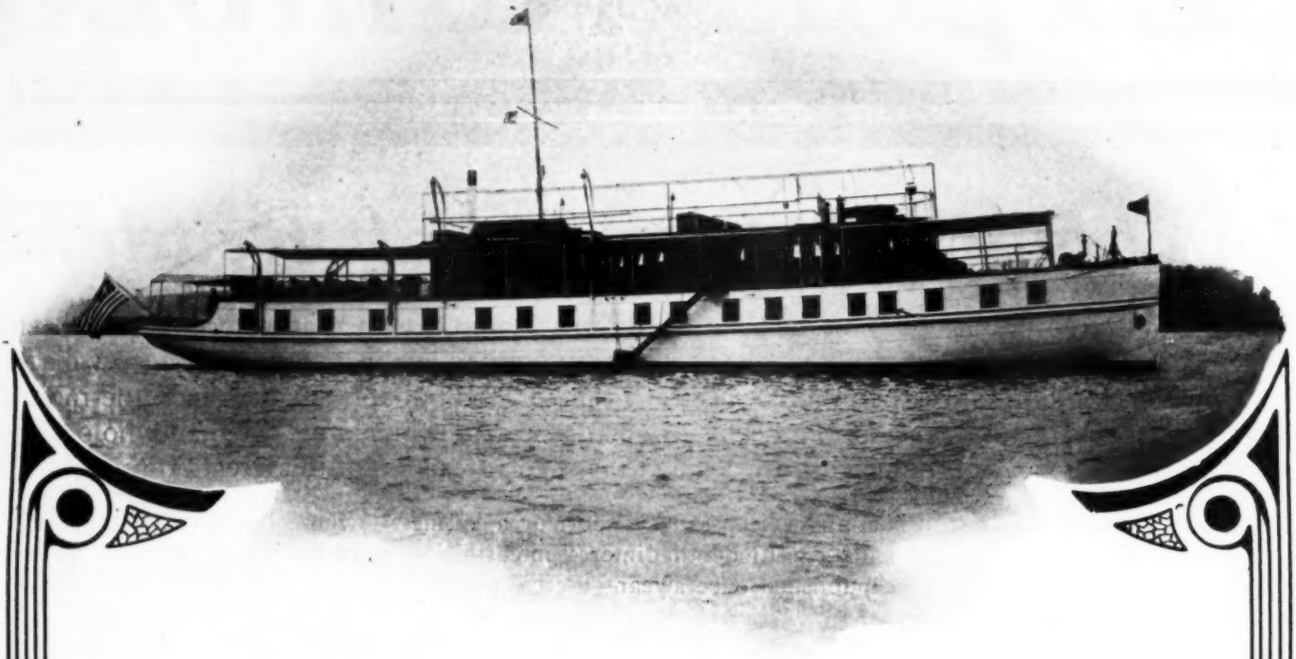
Copy and Designs Free

We shall be glad to write copy and prepare designs without charge for your advertisement in December Motor Boating, if you have no advertising agency to do it for you.

Just send us catalog, circulars, photos or cuts at once and tell what space to use, also which points are to be featured. The copy will then be submitted for your approval before it is used.

For rates, further information or free copy service, write today to

Advertising Department, Motor Boating, 119 West 40th St., New York



Cruising house boat "Captiva" powered with two 200 H. P. Winton engines.

WINTON
SERVICE

You are entitled to two kinds of service with the engine you buy—satisfactory operation of the engine itself, and cooperation by the maker **after** installation.

You could go into the market and safely buy any engine—if all engines equalled Winton performance, and all makers were as keen to cooperate with owners as we are.

But, the average maker thinks after he has built the best engine he knows how to build, that his responsibility has ended. Then, the responsibility is upon you.

Greater security is yours when you buy a Winton. The purchaser runs no risk of inferior quality, for the engine industry does not possess a more capable or progressive designer than Alexander Winton, nor a factory having greater facilities for the production of high-class work.

As to serving the purchaser, the Winton Company conducts its business on the basis of responsibility to the owners of its engines **for all time** and jealously guards its well-earned reputation for doing so.

Whether you purchase the smallest or largest engine we manufacture, the same high quality of design, material and workmanship and the same degree of responsibility for its performance go with it.

WINTON ENGINE WORKS

2116 West 106th Street

Cleveland, Ohio

Four out of Seven were Fay & Bowen

Here is my Record:

1 - - - -	Rotten	1903	?
2 F. & B.	O. K.	1905	Still running
3 F. & B.	O. K.	1906	Still running
4 - - - -		1907	! ! ? 23
5 - - - -	O. K.	1909	Still running
6 F. & B. (Alert)	O. K.	1910	Still running
7 F. & B. (Caprice)		1915	

Entirely unsolicited, a client sent us his record of boats owned for twelve years. Omitting the names of competitors, we print the letter (shown above) exactly as received.

His No. 7 covers his latest purchase, one of our fast runabouts for delivery last Spring.

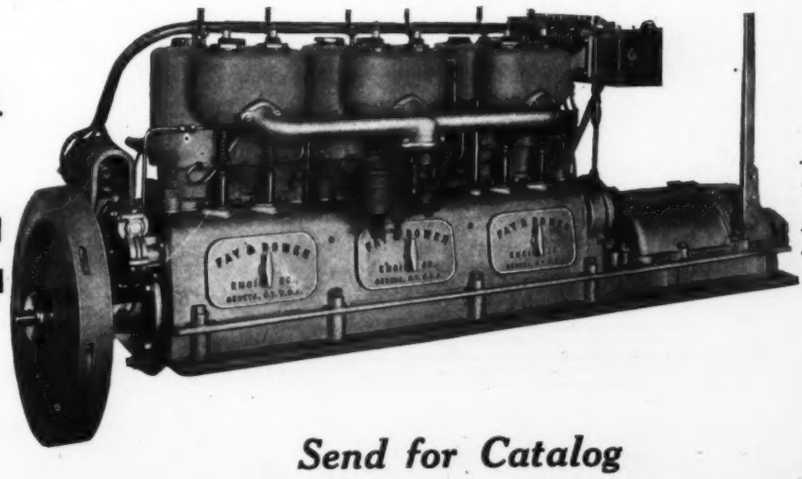
THIS RECORD CARRIES ITS OWN MORAL

Observe that outside of the Fay & Bowen boats, only *one* other has his "O. K." For Reliability, Durability and Power you can't beat Fay & Bowen Engines.

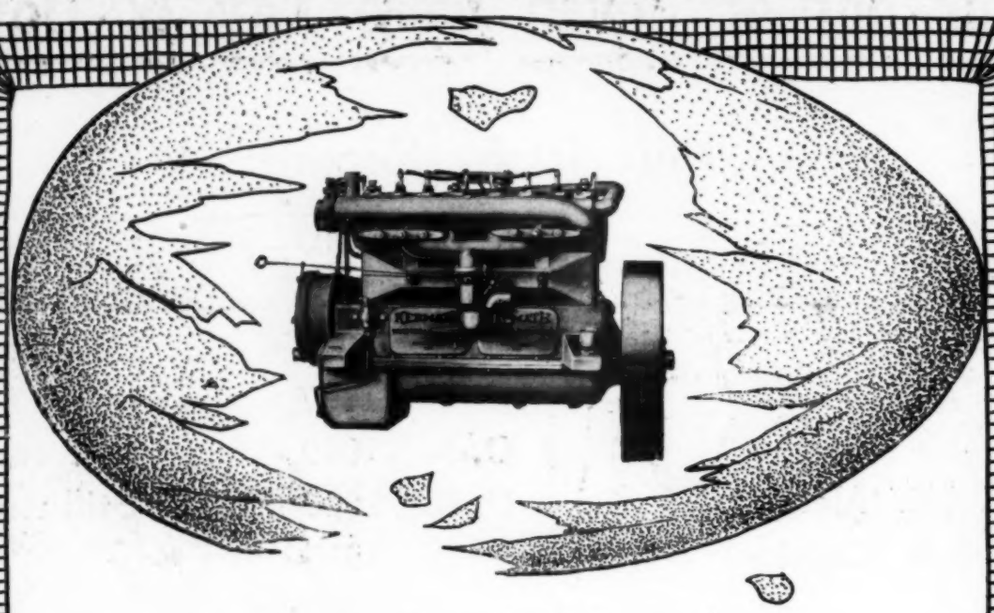
FAY & BOWEN ENGINE CO.

104 Lake Street, Geneva, N. Y., U. S. A.

Made for Canada by
The St. Lawrence Engine Co., Ltd.
Brockville, Ont.



Send for Catalog



Born!—A New

KERMATH

16 HP—$215.00

Dealers and Users Have United in a Strong Request for Another Addition to the Kermath Line

To fill this demand we offer our latest creation—the Kermath 16—which as you will notice from the illustration looks exactly like our 12. The design is identical—but the bore is 3¾ and the stroke 4 as compared with 3½ x 4. Sixteen good honest H. P. @ 800 r. p. m. with efficient operating speeds from 600 to 1000 r. p. m.

Cylinders cast in pairs—same as the 12 — liberal bearings as usual — sturdy crankshaft, drop forged rods and cam shaft, and all the careful attention to detail in design, construction, and workmanship that has made Kermath Marine Power Plants the greatest values ever offered.

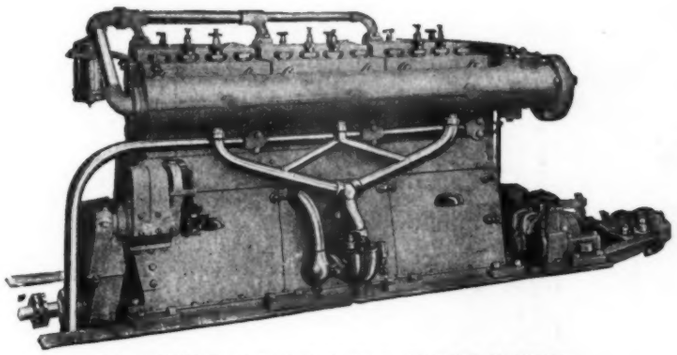
The price of this new Kermath is $215.00 and up, depending on the equipment. There is no other value with which to compare it.

DEALERS—The Kermath Line will help you make some real money this coming season. Better ask about the agency in your territory.

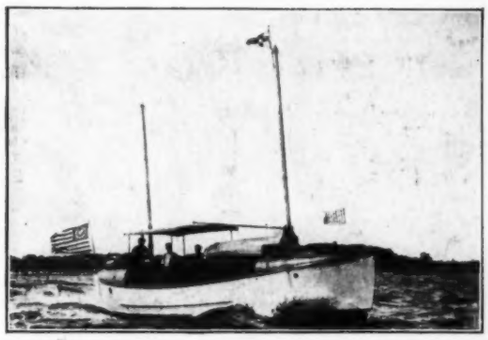
KERMATH MANUFACTURING CO.
DETROIT, MICHIGAN

HOLMES

"The Motor The Life Savers Use"



Holmes Model K—"Life Boat Special." 35-40 H.P. 6 Cylinders.



Holmes Life Boat Cruiser. Self-Righting, Non-Sinkable, Self-Bailing.

WHEN the seas are raging and every nerve of trained life savers is strained to overcome the elements, the factor of extreme Reliability in a life boat motor is a thing of priceless value. Every other consideration is forgotten for the time being. Only the best, the surest, the truest, is good enough for this service.

For nine years Holmes Motors have been exclusively specified for the 36-foot power life boats of the U. S. Coast Guard Service.

Holmes Reliability is worth while for pleasure boats and commercial boats also. You will find Holmes Motors installed in all types of boats where quietness, accessibility, fuel economy, durability and extreme reliability are appreciated.

25 H.P.....4 Cyl. 35-40 H.P.....6 Cyl.
50 H.P.....4 Cyl. 75 H.P.....6 Cyl.
100 H.P.....8 Cyl.

HOLMES LIFE BOAT CRUISERS

Originally designed for life saving work on ocean liners (for which purpose nothing else so practical has ever been devised) Holmes Life Boat Cruisers are now finding a notable demand also for various pleasure and commercial uses.

The unique design, while producing the utmost degree of safety, permits an unusual amount of room for living quarters or cargo space. Interior arrangement can be planned to suit any requirement without affecting in the slightest the unusual safety and reliability.

This boat is absolutely non-sinkable, self-righting, and self-bailing. The motor is mounted in a separate fireproof compartment in the stern. Speed and power meet all usual requirements.

Write today for catalogs of Holmes Motors and Cruisers

The Holmes Motor Co.
Inc.
50 State Street, Boston, Mass.
Works at West Mystic, Conn.

CAREY PTG. CO., N. Y.

Sterling

THE ENGINE of REFINEMENT

For the finest boats that float

A Good Design
A Sound Hull
A Sterling Engine

Efficiency
Reliability
Satisfaction

CONEJO—Twin Screw Express Cruiser of Mr. Roy A. Rainey, of New York. 91'6" x 10'10". She is powered with two Model F 6¾" x 9" Sterling motors and has a speed of 33 miles per hour.

Engines of Refinement for Express Cruisers

Don't Put a Truck Horse on the Race Track. **Don't Use a Heavy Duty Engine for Speed.**

The popular express cruiser of today is no mere vogue. It is here to stay. It requires an engine built expressly for this service—a heavy-duty speed engine. The Sterling Engine Company manufacture such an engine. It is the last word in marine gasoline engine design and construction. Manganese bronze upper base of special "A" frame construction, insuring tremendous strength. Bosch two-point duplex ignition. Enclosed valves and enclosed flywheel, insuring quietness of operation. Positive lubrication. Tungsten steel valves. Electric starter and generator included in regular equipment.

Note Carefully the Following Ratings (Conservative) of the Sterling Model F.

Model	No. Cyl.	Bore	Stroke	600 R.P.M.	1000 R.P.M.	1500 R.P.M.	Weight
F	8	5½"	6¾"	95 H.P.	150 H.P.	200 H.P.	2150 lbs.
F	8	6¾"	9"	160 H.P.	300 H.P.	.....	5000 lbs.

If this model is not suited to your requirements we have one that is. East and West, North and South —there is a Sterling for every size and type of boat.

Engine Room of Conejo—Showing Convenient Arrangement of Controls.

STERLING ENGINE CO.
1254 Niagara Street Buffalo, N. Y., U. S. A.